



Wildlife and
Countryside



**WILDLIFE AND COUNTRYSIDE LINK & WALES ENVIRONMENT LINK
RESPONSE TO THE CONSULTATION ON
(1) THE REVIEW OF SCHEDULE 9 TO THE WILDLIFE AND COUNTRYSIDE ACT 1981
AND
(2) THE BAN ON SALE OF CERTAIN NON-NATIVE SPECIES**

This is a joint response from Wildlife and Countryside Link & Wales Environment Link representing the views of 10 environmental non-governmental organisations in England and Wales.

Wildlife and Countryside Link brings together 39 environmental voluntary organisations in the UK united by their common interest in the conservation and enjoyment of the natural and historic environment.

Wales Environment Link (WEL) is a network for environmental third sector organisations in Wales, most of whom have an all-Wales remit. WEL is officially designated the Intermediary Body between the government and the environmental third sector in Wales.

The following organisations have contributed to, and support, this collective response:

- Buglife – The Invertebrate Conservation Trust
- Butterfly Conservation
- Froglife
- Herpetological Conservation Trust
- The National Trust
- Plantlife International (England & Wales)
- Royal Society for the Protection of Birds
- Wildfowl & Wetlands Trust
- The Wildlife Trusts (England & Wales)
- World Society for the Protection of Animals

Wales Environment Link & Wildlife and Countryside Link are collectively referred to as 'Link' in this joint response.

CONSULTATION DOCUMENT PART 2.1: ANIMAL SPECIES PROPOSED FOR ADDITION TO SCHEDULE 9, PART 1

1) *Do you agree with the proposal to add these animal species proposed for addition to Schedule 9, part 1 to the Wildlife and Countryside Act 1981*

Yes

We welcome proposals aiming to reduce the number and severity of non-native species introductions to England and Wales.

However, regarding the stated aim of this review, 'to ensure that the effectiveness of Section 14 and the licensing provisions concerning non-native species are up to date' (1.2), the proposals presented are insufficient.

A more fundamental and comprehensive review of Section 14 is necessary. We urge Defra and the Welsh Assembly Government to bring forward, at the earliest opportunity, appropriate amendments to this section.

Section 14(1) of the Wildlife and Countryside Act 1981 (WCA), as amended, makes it an offence to release 'any animals not ordinarily resident in and not regular visitors to Great Britain in a wild state' (or hybrids of those animals).

This wording fails to reflect the practical and ecological contexts in which non-native species legislation operates. There are some animal species that are not naturally native to Great Britain but that are currently established in the wild here. These species are now 'ordinarily resident in a wild state' in Britain and so their release would be legal under the relevant clause in the WCA (14(1)), were it not accompanied by a specific schedule listing the relevant species. This is the primary reason behind the drafting of Schedule 9 Part 1 and WCA Section 14 (1A). Therefore, the law as it stands necessarily focuses on species already established in the wild.

This fails to reflect the reality of species invasions:

1. Animal species native to one part of Great Britain but not to another have at least as much potential to establish in the wild, and to cause damage, as those species originating from overseas. Failure to encompass such species under the functional definition of 'non-native' is an important omission.
2. The 2003 European Strategy on Invasive Alien Species, the draft GB Non-native Species Strategy and numerous other key documents emphasise the importance of preventing the establishment of novel non-native species. In contrast, Schedule 9 Part 1 focuses on preventing releases of species that are already established in the wild. This will in general have little or no useful impact. A simultaneous emphasis on prevention of future problem introductions, and on the control, containment or eradication of species already established, is required.

Schedule 9 is also difficult to enforce. Despite increasing international movements of people and goods and the consequently accelerating rate of non-native species introductions, few successful prosecutions have been brought for the introduction of a species listed in Schedule 9. The lack of formal definitions of terms such as 'non-native' and 'wild' are partly responsible, as are difficulties in convincingly demonstrating such concepts as 'release' or 'causing to grow' in courts.

Some of these problems could be resolved by the publication of Codes of Practice under section 14ZB of the WCA (as amended by the NERC Act 2006) that would set out the minimum biosecurity requirements for the keeping of Schedule 9 species. To date there have been no Codes of Practice produced. There are several species for which a Code of Practice is urgently required (e.g. Signal crayfish).

The problems associated with WCA Section 14(1) and Schedule 9 are further highlighted by the current proposals under consultation. Whilst there is no proposal to alter the title of Schedule 9 Part I, 'Animals which are established in the Wild', the addition of a number of species that are not, in fact, currently established in the wild in England or Wales (or elsewhere in Great Britain) is proposed. This inconsistency derives from an attempt to utilise Schedule 9 for a purpose other than its original one. We believe this will generate problems for future prosecutions. It demonstrates that making current non-native species legislation fit for purpose requires increasingly tortuous adjustments. The time is right, therefore, for fundamental revision of Section 14.

We urge Defra and the Welsh Assembly Government to:

1. Introduce and define in legislation the terms 'native', 'non-native', 'release', 'wild' and 'wild state', and thus incorporate the principle that a species native to one part of Great Britain but not to another is as or more likely to be damaging as species from overseas, when introduced outside its natural range.
2. Introduce a duty on Ministers to require action, via a nominated body, to control, contain or eradicate those animals or plants deemed to pose a serious threat to flora, fauna, or social or economic interests.
3. Introduce a power to allow the imposition of a restoration order by a court upon conviction of an offence under Section 14 or Section 14A ('the polluter pays').

Link also proposes that the WCA is amended such that, for vertebrates, rather than listing species piecemeal (which has proved problematic and very difficult to enforce), places restrictions on broader taxa (i.e. fish, amphibians, reptiles, birds and mammals). Provision should then be made for specific exceptions, which may be released under licence.

We urge that the proposed adjustments to Schedule 9 are presented as an interim measure with a view to more fundamental revision. Link's support of the proposals is conditional on this point.

As an interim measure, the addition to the schedule of species subject to re-introduction programmes is to be welcomed. Link supports the regulation of native species re-introductions and translocations. We believe that the Government should, subject to assessment of the risks, methods, and conservation benefits, license the release of native birds and animals within their native range, thus facilitating scrutiny of plans and ensuring that the IUCN guidelines on reintroduction projects are adhered to.

2) *Are there any species in the list above that you think should not be added?*

No

Notwithstanding response to Q1 above

3) Are there any species missing from the list above that you think should be added? Please refer to the JNCC checklist and guidance on Annex B for assistance in proposing additional species.

Yes

Notwithstanding response to Q1 above:

Mammals:

We believe that all mammals (Class Mammalia) should be added to Part 1 Schedule 9 for offshore islands, with potential for the release of specific named exceptions under licence from Ministers. Experience has shown that the establishment of non-native mammals on islands is nearly always to the detriment of native biodiversity. General exclusions such as domestic stock should be facilitated through the introduction and definition in legislation of the terms 'native', 'non-native', 'release', 'wild' and 'wild state'.

Should Defra and the Welsh Assembly Government decline to adopt this approach, then the current list needs the following additions to serve as a minimum interim measure:

Black rat	<i>Rattus rattus</i>
Rabbit	<i>Oryctolagus cuniculus</i>
House mouse	<i>Mus musculus</i>
Hedgehog	<i>Erinaceus europaeus</i>

Birds:

All ducks, geese and swans (family Anatidae), and all falcons (family Falconidae) should be added to Schedule 9. These species present an unusually high threat level when introduced as non-natives because mating events between native and non-native species often produce viable and fertile offspring, which can precipitate the extinction of native forms (Rhymer and Simberloff, 1996).

Link supports the inclusion of bird species subject to reintroduction programmes as a means of restricting these to planned, approved projects only. Following this logic, we suggest the following are considered for inclusion:

Black Grouse	<i>Tetrao tetrix</i>
Hen Harrier	<i>Circus cyaneus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Osprey	<i>Pandion haliaetus</i>

Given the inclusion of Monk and Blue-crowned parakeets, we recommend, with similar justification, the inclusion of:

Alexandrine parakeet *Psittacula eupatria*.

Freshwater Fish:

Link urges that, as taxa with a demonstrably high proportion of damaging species when released as non-natives, all fish species of the Classes Agnatha,

Chondrichthyes and Osteichthyes, should be added to Schedule 9 Part 1. A licensing system should be introduced to permit certain specific exemptions, such as coarse fish releases in catchments where they are native, and salmonids in appropriate water bodies, with Ministerial approval.

As a minimum measure, Schedule 9 should reflect the schedules of the Prohibition of Keeping or Release of Live Fish (Specified Species) (Amendment) (England) and (Wales) Orders 2003, and the species list adjusted accordingly. If this is not undertaken, inconsistencies across the relevant legislation will introduce potential for problems in enforcement.

Invertebrates:

With invertebrates - in contrast to our views on vertebrates - Link supports the species listing approach. However, we recommend the inclusion in Part 1 of Schedule 9 of all crayfish, i.e. freshwater decapod crustaceans of the Families Astacidae, Cambaridae or Parastacidae, unless done under licence. This will allow the regulation of releases of this dangerous group and ensure that future reintroductions of the native species (*Austropotamobius pallipes*) are planned and approved.

We also urge the inclusion of:

Harlequin Ladybird *Harmonia axyridis*

As a minimum response to the spread of non-native crayfish species the following species should be added:

Virile crayfish *Orconectes virilis* (this species recently confirmed in the wild)

Amphibians and Reptiles

The rationale provided for the inclusion of the red-eared terrapin on the proposed Order for a ban on sale raise an issue of consistency in proposing species for addition to Schedule 9. As this species is already present in the wild and has the potential to cause problems, it should be added to Schedule 9.

Ref. Rhymer JM and Simberloff D (1996): Extinction by hybridization and introgression. Annual Review of Ecology and Systematics 27: 83-109.

4) Do you have any comments on the checklist and guidance provided?

No

5) Do you have any other comments about the addition of animal species to Schedule 9?

Yes

As globalisation of trade intensifies and climate change progresses, new non-native species threats, currently unforeseeable, will arise. If making piecemeal additions/deletions to Schedule 9 is to be the Government's primary legislative mechanism for addressing these issues, the relevant schedules will require regular review and update.

We recommend that a three-year review process is established, with stakeholder consultation. Care should be taken to ensure that this review is undertaken promptly.

We request a wording change to the rationale for corncrake, as the current text does not acknowledge the re-introduction project currently in progress in Cambridgeshire.

CONSULTATION DOCUMENT PART 2.2: ANIMAL SPECIES PROPOSED FOR REMOVAL FROM SCHEDULE 9, PART 1

6) Do you agree with the proposal to remove these animal species from Schedule 9 of the WCA 1981? If not, please explain in detail.

Yes

Notwithstanding our response to Question 1, Link believes the proposed removals are appropriate as part of interim measures using Schedule 9

7) Are there any other species you think should be removed from Schedule 9 to the WCA 1981? Please refer to the JNCC checklist and guidance at Annex B for assistance in proposing species for removal from Schedule 9 and use the form supplied

No

8) Do you have any other comments about the removal of animal species from Schedule 9?

No

CONSULTATION DOCUMENT PART 2.3: PLANT SPECIES PROPOSED FOR ADDITION TO SCHEDULE 9, PART II

9) Do you agree with the proposal to add these plant species to Schedule 9, part II to the WCA 1981?

Yes

10) Are there any species on the list above that you think should not be added? Please give your reasons in detail

Yes

Given that we support an evidence based 'bottom up' species listing process for plants, Link believes that current evidence justifies the following amendments:

Cotoneasters:

The list should include the following species, rather than all: *C. microphyllus* agg., *C. horizontalis*, *C. simonsii* and *C. bullatus*.

Crocoshmia:

The list should include: *Crocoshmia x crocosmiiflora*, rather than all *Crocoshmia*.

11) Are there any species missing from the list above that you think should be added? Please refer to the JNCC checklist and guidance at Annex B for assistance in proposing additional species

Yes

Link believes that the following species should be added to the schedule:

Acaena novae-zealandia (Pirri-pirri-bur)

Effects on biodiversity - This species has become established at many important wildlife sites in Britain and Ireland, where it out-competes native vegetation and is impossible to eradicate without wholesale destruction of the habitat. Becomes especially invasive when it becomes established on cool, damp cliffs and upland habitats (such as in Ireland, northern England, and southern Scotland), where it smothers native higher and lower plant species. These are often sites where threatened native species occur and populations of these species suffer as a result.

These effects have been observed at several sites in Britain and Ireland and are suspected at others. It is highly likely that other sites (especially upland and cliff sites in northern England and Wales) will be negatively impacted should this species become established.

Ailanthus altissima (Tree of Heaven)

Effects on biodiversity - This species can become very invasive on railway banks, roadsides and waste ground, forming very densely-suckering thickets that out-compete and exclude native vegetation. It is a very serious invasive species in central and southern Europe and is listed as among the top 25 invasive species by the European Plant Protection Organization that pose "an important threat to plant health, environment and biodiversity". It has become a serious threat to native rare and threatened species and habitats at sites in Australia, New Zealand, North America (Virginia, California) and central and southern Europe.

The invasive effects of *Ailanthus* have been observed at many sites in Britain and although these are mostly in urban or semi-urban areas, the species is expected to spread rapidly and invade semi-natural habitats. Reports of its occurrence appear to be increasing and it is very likely that the rate of spread will increase under the current scenarios of climate change in Britain, where warmer summers and milder winters will encourage its growth.

Egeria densa (Large-flowered Waterweed)

Effects on biodiversity - This species grows prolifically into very dense aggregations that directly out-compete and shade-out native species. The potential exists for this species to become as problematic as *Elodea canadensis* both in its effect on native species and on blocking navigable waterways, rivers and ditches, and in clogging up sluices and drainage ditches. Unlike *Elodea*, this species is still rare enough in the wild to make control effective at the national scale.

The negative effect of *Egeria* on native vegetation has been observed in mill-streams, rivers and canals in S. Lancashire. Its increase is highly likely given the evidence of new records since 2002 and increasing winter minimum temperatures that allow the plant to survive underwater. This plant flowers only in warm water conditions and it has been recorded flowering for the first time in Surrey in 2006.

Ludwigia x kentiana

Effects on biodiversity - This species grows on the damp or wet muddy margins of pools and ponds, or as a shallow aquatic rooted in the substrate. It is vigorous and mat-forming and out-competes native species growing in the same habitat. One of its parents (*L. palustris*, Hampshire Purslane) is a rare native species found in seasonal ponds and pools in the New Forest (Hampshire). Should the hybrid become established in the same habitat it is highly likely that it will out-compete our native species.

Adverse effects are likely given the invasive characteristics of similar species and the hybrid vigor shown by this related species.

Lysichiton americanus (American Skunk-cabbage) and *L. camtschaticensis* (Asian Skunk-cabbage)

Effects on biodiversity - These species have become established along river and stream banks, in ditches, around pools, ponds and lakes, and in damp swampy ground such as alder carr and willow thickets. Both species are very large and vigorous plants once established, and produce extremely large leaves (up to 1.5 meters long). They can out-compete native species directly for space, especially through their leaves which become prostrate later in the year and smother surrounding vegetation.

The competitive effects of *Lysichiton* species have been seen at many sites in Britain, especially in the south and south-west. Given their size, longevity, and ability to reproduce by seed, they cause extensive damage locally.

Persicaria wallichii (Himalayan Knotweed)

Effects on biodiversity - This large (to 2 meters tall) species becomes established on streamsides, hedge banks, woodland edges, roadsides, railway banks and waste ground, where it grows into extremely dense stands that out-compete native vegetation. Negative effects on native vegetation are very commonly seen wherever this species becomes established.

Pontederia cordata (Pickerelweed)

Effects on biodiversity - This is a large, robust species forming very dense stands once established. It out-competes native vegetation through direct competition for space.

Damaging competitive effects on native vegetation have been observed at several sites in Britain, including in the New Forest (Hatchet Pond). *P. cordata* is a serious invasive species in southern N. America.

Caulerpa taxifolia and *C. racemosa*

Effects on biodiversity - *C. taxifolia* forms extensive high-density beds and the reported effects of *C. taxifolia* on native organisms are mostly negative. Evidence suggests that *C. taxifolia* outperforms native seagrasses, alters fish foraging behaviour, population structure and species diversity, reduces the abundance of native epifauna on hard substrata and negatively affects bivalve reproduction.

C. racemosa has similar effects and experimental evidence demonstrates its deleterious effects on macroalgal diversity on local scale.

Deleterious effects of these species in the USA, Australia and the Mediterranean are well documented and similar effects are likely here should they become established.

Further species should be added as indicated by an ongoing risk assessment and three-yearly review process.

12) Do you have any comments on the checklist and guidance provided?

No

13) In scheduling Sea Buckthorn, it is proposed that the prohibition in section 14 should apply only in defined areas where it is non-native and causing ecological damage to native biodiversity. Do you agree with this approach? How should these areas be defined?

No

Link believes that species native to one part of Britain but not to another are potentially damaging to native biodiversity when introduced into the latter areas, and that this is a key issue requiring the introduction and definition in legislation of the terms 'native', 'non-native', 'release', 'wild' and 'wild state'.

Addressing this issue must, however, have regard for varying degrees of confidence regarding our knowledge of native ranges. Sea buckthorn is a poor candidate for 'native species inclusion' on Schedule 9 as there are considerable uncertainties regarding the exact extent of its native range. Where local problems are encountered, appropriate land management solutions should be sought.

14) Do you have any other comments about the addition of plant species to Schedule 9?

Yes.

As globalisation of trade intensifies and climate change progresses, new non-native species threats, currently unforeseeable, will arise. We recommend that a three-year review process is established, with stakeholder consultation. Care should be taken to ensure that this review is undertaken promptly.

CONSULTATION DOCUMENT PART 2.4: COSTS AND BENEFITS OF ADDING SPECIES TO, OR REMOVING SPECIES FROM, SCHEDULE 9

15) What costs and benefits might there be to your sector or business from prohibiting the introduction of these species to the wild?

Non-native invasive species, the second biggest threat to biodiversity (European Strategy on Invasive Alien Species, 2003), are causing significant problems for Britain's biodiversity, economy and social well being, as they impact on native habitats, premises, land holdings and watercourses. We urgently need effective legislation and action to help combat the problems these species are causing.

The proposals outlined in this consultation, and our response, are a step towards ensuring that England and Wales recognise the significant biological and financial impact of continuing to allow non-native invasive species to be spread by human activity in the wild. The control and eradications of non-native invasive species at key sites for native biodiversity can be very costly (e.g. the control of *Rhododendron ponticum* in Snowdonia is estimated at £4.5 million; the cost of removing *Crassula helmsii* from ponds in the New Forest in 2002 was estimated as being between £60-110k).

Any change to improve the current legislative framework is to be welcomed, but more fundamental changes than those currently proposed will be needed to optimise our future capacity to respond.

16) If adding certain species to Schedule 9 will have an impact on your business, what alternative action might you take or what alternative species might you use?

No comment

17) Would the addition to, or removal from, Schedule 9 of any of the proposed species have beneficial or detrimental environmental impacts other than those identified in the tables in the consultation document?

Beneficial to biodiversity.

18) Would the addition to, or removal from, Schedule 9 of any of the proposed species have beneficial or detrimental social impacts?

As suggested in section 5.4 of the Impact Assessment, the social benefits of acting to limit the spread of invasive species include improved opportunities to enjoy our native fauna and flora, and a potential reduction in health and safety risks.

19) Are there any relevant business areas not yet identified in the consultation paper or the Impact Assessment?

Yes

Fundamental revision of the legislation, improvements in its enforcement, and coordination with the forthcoming GB Non-native Species Framework Strategy could deliver very significant economic benefits, through minimising the costs to society of species invasions by improving preventative mechanisms. Agricultural and environmental losses to invasive species in the UK, USA, Australia, South Africa, India, and Brazil amount to an estimated US\$ 330 billion each year (Pimentel et al, 2001).

In that they are essentially limited extensions to existing lists, the current proposals, regrettably, miss an important opportunity to make our legislation fit for purpose.

Increasing globalisation of trade, climate change and habitat degradation will combine to intensify the socio-economic and ecological threats posed by non-native species in the near future. We urge Defra and the Welsh Assembly Government to bring forward the required changes to Section 14 and invest in a robust, balanced approach to this problem.

Ref: Pimentel et al (2001). Economic and environmental threats of alien plant, animal, and microbe invasions. *Agriculture, Ecosystems and Environment* 84, 1–20.

20) Do you have any other comments about costs and benefits?

No

CONSULTATION DOCUMENT PART 3.1: JAPANESE KNOTWEED

21) Do you agree that in respect of Japanese knotweed, which is currently listed on part II of Schedule 9, *Fallopia japonica*, should be included under the scientific names as a synonym for *Polygonum cuspidatum*?

No

The valid taxonomic name for Japanese Knotweed is *Fallopia japonica* and it should be listed as this on Schedule 9. As it stands, *Polygonum cuspidatum* is a synonym for *Fallopia japonica* and it would be unhelpful to continue to list the species as such.

CONSULTATION DOCUMENT PART 3.2: HYBRIDS OF SCHEDULE 9, PART I (ANIMALS)

22) Do you agree to the introduction of the provision that makes it clear that all hybrids of those animals listed on part I of Schedule 9 are caught within the scope of section 14(1)?

Yes

23) Do you have any other comments about the issue of including animal hybrids in Schedule 9?

No

CONSULTATION DOCUMENT PART 3.3: HYBRIDS OF SCHEDULE 9, PART II (PLANTS)

24) Do you agree to the introduction of the provision that makes it clear that all hybrids of those plants listed on part II of Schedule 9 are caught within the scope of section 14(2)?

Yes

25) Do you have any other comments about the issue of including plant hybrids in Schedule 9?

Yes

We believe that it is necessary to be able to directly list hybrids, not only through the provision to list all hybrids of plants on part 2.

CONSULTATION DOCUMENT PART 4.2: NON-NATIVE ANIMAL SPECIES PROPOSED FOR LISTING ON AN ORDER TO BAN THEIR SALE

26) Do you agree with the proposal to ban the sale of these animal species under section 14ZA of the WCA 1981?

Yes

27) Are there any species on the list above that you think should be included? Please refer to the 'criteria for listing' and give your reasons in detail

No

28) Are there any species missing from the list that you think should be included? Please give your reasons in detail.

Yes

Link recommends that all crayfish species (Astacidae, Cambaridae and Parastacidae) other than *Austropotamobius pallipes* are included, rather than the short list of species proposed. Justification is given in the current explanation in 4.2: [..'other species have the capacity to spread into new catchments as a relatively new threat.']. This group is recognised as being a threat in general and there are no species that can be deemed safe when introduced as non-natives into freshwater catchments. One example is the Rusty crayfish (*Orconectes rusticus*) which is now in the wild in France. The ban of sale of live crayfish should include Signal crayfish (*Pacifastacus leniusculus*) as a minimum measure. This species is so strongly invasive that it makes good conservation and economic sense to prohibit it from live sale.

As a minimum measure the following species should be included:

Harlequin Ladybird

Harmonia axyridis

This species is widely traded as a pest control agent. There is ample evidence that the Harlequin ladybird is capable of causing damage to house décor, populations of wild ladybirds and fruit crops. All practicable measures should be taken to eliminate this species in the UK, including the prevention of any sale of the species.

29) Do you have certain comments about the proposed ban on sale of certain non-native species?

No

CONSULTATION DOCUMENT PART 4.3: NON-NATIVE PLANT SPECIES PROPOSED FOR LISTING ON AN ORDER TO BAN THEIR SALE

30) Do you agree with the proposal to ban the sale of these plant species under section 14ZA of the WCA 1981?

Yes

31) Are there any species on the list above that you think should not be included? Please refer to the 'criteria for listing' and give your reasons in detail.

No

32) Are there any species missing from the list that you think should be included? Please give your reasons in detail.

Yes

Link proposes the following:

- *Acaena novae-zelandiae* - this species has often become established in the wild via the disposal of garden waste.
- *Allium triquetrum* - this very vigorous and invasive species is still arising in the wild as a direct result of introductions from gardens, especially via the disposal of excess garden material. A wide range of other white-flowered Alliums are available for gardeners that are not invasive.
- *Cabomba caroliniana* - this species is only introduced into the wild by the discarding of excess aquarium material. A ban on sale will be an extremely effective mechanism to prevent it becoming widely established in the wild. Many non-invasive alternative species already exist in the aquarium trade.
- *Crocoshia x crocosmiiflora* - this species causes considerable problems in the wild and there are many other garden hybrids, most of which are not thought to be problematic.
- *Disphyma crassifolium* - this species is becoming increasingly widely available from garden centres and nurseries as our milder winters make it more available to gardeners, and will become much more of a problem in the wild as escapes increase. The very similar *Carpobrotus edulis* is already suggested for ban on sale.
- *Egeria densa* - this is another species that is introduced to the wild by aquarium keepers discarding excess material into the wild. The spread of this species would be halted by a ban on sale, and non-invasive alternatives already exist in the aquarium trade.
- *Fallopia sachaliensis* and *F. x sachaliensis* - these taxa should be included along with *F. japonica* (*F. x sachaliensis* is the hybrid between the two). The principle of including hybrids on Schedule 9 should be adopted with the Ban on Sale list.
- *Gaultheria mucronata* - this very invasive species should be included along with the very similar *G. shallon*, which is already proposed for a ban on sale.
- *Heracleum mantegazzeanum* - although long-known as a very invasive species and one of the few plant species listed on Schedule 9, this plant is still available for sale in Britain. It spreads prolifically, especially along watercourses, but does not easily become established in new sites; escape from gardens or deliberate planting are the main mechanisms for this and so a ban on sale would be effective in reducing its spread. Its well documented ability to cause severe burns on contact with skin in sunlight is another reason to ban its sale.
- *Lamiaeum galeobdolon* subsp. *argentatum* - this species is very invasive in the wild and almost all introductions come from disposal of excess garden material. Other non-invasive species and varieties (such as *Lamium maculatum*) are almost identical in appearance and are widely available as alternatives.
- *Ludwigia x kentiana* (*L. palustris* x *L. repens*) - this vigorous sterile hybrid is again almost exclusively introduced into the wild through the disposal of excess garden

material and should be listed along with the other *Ludwigia* taxa already proposed. One parent of this hybrid (*L. palustris*) is a rare native species and should not be listed on Schedule 9, Part II or the Ban on Sale list.

- *Pistia stratiotes* - all introductions of this species are currently from cultivated material escaping or deliberately planted in the wild. A ban on sale would be a very effective mechanism to prevent its spread into the wild.
- *Rhododendron ponticum* hybrids (*Rhododendron ponticum* x *R. maximum*) - this hybrid should be listed as well as *R. ponticum* (already proposed) as many plants in the wild are probably this taxon. This fertile hybrid is probably more tolerant of a wider range of environmental conditions than *R. ponticum* and has some hybrid vigour, making it more problematic than the pure species already proposed for addition.
- *Sagittaria latifolia* - as with many other aquatics, the main mechanism for the introduction of this species into the wild is through deliberate planting in the wild. A ban on sale would be extremely effective in reducing its spread. Alternative species are widely available.
- *Caulerpa taxifolia* and *C. racemosa* - These two green algae (seaweed) species are extremely popular in the marine aquarium trade, where they are used for nitrate absorption in aquarium refugiums. They grow very quickly and are often discarded when they out-grow their tanks. Disposal of material into the wild from aquaria have been the primary sources of establishment in the Mediterranean, Australia and southern California (USA), with devastating effects, especially in the Mediterranean. A ban on sale would be an extremely effective mechanism to prevent their spread in Britain as a precautionary measure should climate change allow their establishment around our coasts. Alternative non-invasive marine aquarium algae (such as *Chaetomorpha* and *Halimeda* species) are already widely available in the marine aquarium trade and should be promoted.

33) Do you have certain comments about the proposed ban on sale of certain non-native species?

No

CONSULTATION DOCUMENT PART 4.4: COSTS AND BENEFITS OF A BAN ON SALE OF THE PROPOSED SPECIES

34) What costs and benefits might there be to your sector or business from banning the sale of these species? How much of an impact might there be in terms of cost to your business and those you employ?

If legislation and schedules are altered effectively, and if the relevant authorities are provided with the training and resources required for effective enforcement, biodiversity benefits will accrue.

There should also be: financial benefits to fisheries from the banning of sale of non-native crayfish; benefits to home owners and possibly fruit producers if the sale ban slows the spread of the Harlequin ladybird; savings to taxpayers, environmental, agricultural and nature conservation organisations if, as a result of this legislation, there are fewer instances where invasive organisms must be controlled or eliminated in the wild.

35) *If banning the sale of certain species will have an impact on your business, what alternative action might you take or what alternative species might you use?*

No comment

36) *If alternative species are available, what would be the costs to your business in making the adjustment?*

No comment

37) *Would a ban on sale of any of the proposed species have beneficial or detrimental environmental impacts other than those identified in the table above?*

No

None, beyond biodiversity benefits

38) *Would a ban on sale of any of the proposed species have beneficial or detrimental social impacts other than those identified in the table above?*

No

39) *How might a ban on sale of one or more of the proposed species impact on keepers and collectors?*

No comment

40) *Do you have any other comments about the costs and benefits of a ban on sale of certain non-native species?*

No