

The Invasive Non-Native Species Framework Strategy for Great Britain



Protecting our natural heritage from invasive species



Llywodraeth Cynulliad Cymru
Welsh Assembly Government



Department for Environment, Food and Rural Affairs
Nobel House
17 Smith Square
London SW1P 3JR
Telephone 020 7238 6000
Website: www.defra.gov.uk

© Crown copyright 2008
Copyright in the typographical arrangement and design rests with the Crown.

This publication (excluding the royal arms and departmental logos) may be re-used free of charge in any format or medium provided that it is re-used accurately and not used in a misleading context. The material must be acknowledged as crown copyright and the title of the publication specified.

Information about this publication and further copies are available from:

The GB Non-native Species Secretariat
Central Science Laboratory
Sand Hutton
York
YO41 1LZ
Tel: 01904 462680
Email: nns@csl.gov.uk
Published by the Department for Environment, Food and Rural Affairs

Cover photographs (top left to bottom right): Signal crayfish (*Pacifastacus leniusculus*), Wireweed (*Sargassum muticum*), Rose-ringed parakeet (*Psittacula krameri*), *Rhododendron ponticum*, Citrus longhorn beetle (*Anoplophora chinensis*), False acacia (*Robinia pseudoacacia*), Colorado beetle (*Leptinotarsa decemlineata*) and Floating pennywort (*Hydrocotyle ranunculoides*).

Product Code: PB13075

Foreword

It is widely accepted that one of the greatest threats to biodiversity across the globe is that posed by invasive non-native species. The huge ecological and economic impacts imposed by the minority of non-native species that become invasive are increasingly being understood. It has been estimated that damage caused by invasive species worldwide amounts to almost five percent of the world economy.

Recognising the importance of this issue and in the light of a number of international biodiversity commitments, the governments of England, Scotland and Wales have worked closely with a wide range of key partners to formulate our response to it.

We are among the first in Europe to develop a comprehensive national policy framework on invasive non-native species and we are now delighted to publish the Invasive Non-Native Species Framework Strategy for Great Britain.

This marks a significant achievement, built upon the foundations of the comprehensive policy review report of 2003, and we warmly welcome the very high degree of input and support along the way from all those interested organisations and individuals.

This Strategy sets out our high-level framework and details the key actions required to address the problems caused by invasive non-native species. Our vision is a strong and broad partnership approach, helping to protect our natural heritage and our economic interests against this serious and increasing threat.



Joan Ruddock
Minister for Climate Change
Biodiversity and Waste, Defra



Michael Russell
Minister for Environment
Scottish Government



Jane Davidson
Minister for Environment,
Sustainability and Housing
Welsh Assembly Government

Contents

1	Introduction	2
2	Strategic Aims	7
3	Scope and Terminology	8
4	The GB Non-Native Species Mechanism – Roles and Responsibilities	9
5	Strategic Approach	10
6	Prevention	11
7	Early Detection, Surveillance, Monitoring and Rapid Response	14
8	Mitigation, Control and Eradication	17
9	Building Awareness and Understanding	20
10	Legislative Framework	23
11	Research	25
12	Information Exchange and Integration	27
13	Implementation and Review	29
	Annex 1: International Commitments Concerning Invasive Non-Native Species	30
	Annex 2: Key Recommendations From “Review of Non-Native Species Policy: Report of the Working Group”, Defra, 2003	32
	Annex 3: The Great Britain Invasive Non-Native Species Framework Strategy Working Group	33
	Annex 4: The Great Britain Non-Native Species Mechanism	34
	Annex 5: Key Related Strategies	36
	Annex 6: List of Abbreviations	41
	Annex 7: References	42

1 Introduction

Our Vision

Our vision is that when this Strategy is fully implemented, biodiversity, quality of life and economic interests in Great Britain will be better protected against the adverse impacts of invasive non-native species because there will be:

- widespread awareness and understanding of the risks and adverse impacts associated with invasive non-native species, and greater vigilance against these;
- a stronger sense of shared responsibility across government, key stakeholder organisations, land managers and the general public for actions and behaviours that will reduce the threats posed by invasive non-native species or the impacts they cause; and,
- a guiding framework for national, regional and local invasive non-native species mitigation, control or eradication initiatives helping to reduce the significant detrimental impact of invasive non-native species on sensitive and vulnerable habitats and species.

The need for a Strategy

- 1.1 Over the millennia, many non-native species have been deliberately introduced into Great Britain (GB) where they contribute to economic and social well-being through, for example, agriculture, forestry, horticulture, fisheries and the pet sector. Many other species have been introduced accidentally. Audits conducted by Scottish Natural Heritage and the former English Nature identified 988 and 2,271 non-native species present in Scotland and England respectively. Most, such as Horse Chestnut or Little Owl for example, are benign or have contributed to Britain's natural heritage. However, a minority of non-native species can become dominant in the environment where they may impact on native species, transform ecosystems and cause environmental harm. These are the invasive non-native species which form the central concern of this Strategy.
- 1.2 Invasive non-native species of flora and fauna are considered the second biggest threat after habitat loss and destruction to biodiversity worldwideⁱ and the greatest threat to fragile ecosystems such as islands. Because of the increase in the global movement of people and goods, they pose a growing problem in the conservation of biodiversity, and are a threat to economic interests such as agriculture, forestry and fisheries. The true extent of the threat posed by invasive non-native species has become much better understood in recent times, including an appreciation of the fact that past introductions have usually occurred with little awareness of the potential consequences.
- 1.3 Invasive non-native species are one of the major factors causing biodiversity loss highlighted in the Millennium Ecosystem Assessment report "Ecosystem and Human Well-being: Biodiversity Synthesis"ⁱⁱ. One of the key messages observes that: "The most important direct drivers of biodiversity loss and ecosystem service changes are habitat change (...), climate change, invasive alien species, overexploitation, and pollution." It notes that invasive non-native species continue to be major drivers of change in biodiversity, have been a major cause of extinctions, especially on islands, and that "the introduction of non-native invasive species is one of the major causes of species extinction in freshwater systems."
- 1.4 The report also notes that control or eradication of an invasive species once it is established is often extremely difficult and costly, while prevention and early intervention have been shown to be more successful and cost-effective.

- 1.5 Invasive non-native species are a global problem and many governments are committed to tackling them via several international agreements. These are summarised in Annex 1.

Climate Change

- 1.6 Climate change will have a substantial impact on biodiversity in the coming years – both by affecting the distribution of our native species, and by enabling some non-native species to become more common. Increasingly we could also see more non-native species that are currently benign become invasive as the climate changes. Already we are seeing some evidence of animals occurring outside their usual or expected ranges. Recent research also shows that the (generally northerly) expanding range of some



Climate change is likely to result in more flooding events and these can be greatly exacerbated by invasive plants choking waterways.

species including butterflies, marine molluscs, migratory birds and plants are consistent with patterns of climate change seen in the UK over the past 30 years. Climate change response is one factor driving range extensions of species and this will continue over coming decades. In that context, prevention measures and eradication attempts are not viable and some new species may fill suitable niches. However non-native species arriving by their own means, driven by climate change and displaying invasive characteristics are not necessarily excluded from the scope of measures proposed in this Strategy such as detection, surveillance, mitigation and, where appropriate, control. In the longer term, further debate will be necessary from both a policy and a science perspective on the issue of colonisation by non-native species driven by climate change.

Economic issues

- 1.7 Apart from the cost in biodiversity terms, invasive non-native species can also create a huge economic cost to a very wide range of sectors, probably of the order of several billion pounds annually in Britain. For example, it is expected to cost many millions of pounds to deal with invasive weeds such as Japanese knotweed on land destined to host the infrastructure of the 2012 London Olympics.

Introduction

- 1.8 There are already several well established systems in place to address invasive non-native species issues in Great Britain; however, they are strongly biased towards areas of traditional economic importance, such as plant, animal and fish health. In 2001 Defra initiated a fundamental review of policy for non-native species, the report of which was published in 2003ⁱⁱⁱ. The key recommendations from that report are reproduced at Annex 2 of this document. A key finding was that responsibilities and action in respect of non-native species were lacking sufficient co-ordination and strategic direction; and this resulted in a general failure within Great Britain to make optimum use of existing capacity and resources to address the impact of invasive non-native species on biodiversity. This lack of a clear strategic framework was further confirmed in the context of subsequent research into the spread of responsibilities concerning non-native species across the governments, their various related bodies and local government.



Japanese knotweed (Fallopia japonica) is a highly invasive plant introduced to Britain in the mid Nineteenth Century. It is extremely difficult to remove and costs the development industry millions of pounds per annum.

Content of Strategy

- 1.9 The Great Britain Non-Native Species (NNS) Programme Board, set up in response to the 2003 review report, has commissioned this Framework Strategy with the aim of addressing the key weaknesses in our capacity to respond to the threats posed by non-native species. It embraces all of the 2003 review report's key recommendations, and the Board is grateful to the Strategy Working Group detailed at Annex 3 for its work.
- 1.10 This Strategy acknowledges that invasive non-native species issues are relevant to the interests of a very large number of stakeholders, including government departments and agencies, non-governmental organisations, a wide range of trade and industry sector interests, land-owners, researchers and the general public. In drawing up this Strategy we have sought substantial input from stakeholders, including devoting the 2006 annual Non-Native Species Stakeholder Forum to the early stages of its development and workshops at the 2007 Forum to gain further feedback on the draft Strategy.

- 1.11 The GB Strategy provides a framework for a more co-ordinated and structured approach to dealing with non-native species and any potential invasive threat in or to Great Britain. It includes better co-ordinated and strategic prevention measures aimed at reducing the introduction of damaging non-native species into Great Britain. Its implementation will enable more rapid detection of potentially invasive non-native species through improved and better targeted monitoring and surveillance. Where appropriate, and subject to adequate resources and technical capability, contingency planning and improved capacity to act decisively will enable rapid responses with a view to eradicating newly arrived invasive species. Implementation should lead to more targeted and efficient control, mitigation and, where both necessary and feasible, eradication of established invasive non-native species. It will also lead to greater public awareness, more strategic research and proposals for an improved legislative framework.
- 1.12 Successful implementation of the Strategy will undoubtedly require a strong partnership approach with the active involvement of all interests. Success will involve, for example, the combined results of control efforts by landowners, the surveillance and monitoring work of conservation bodies and operation of the high-level mechanisms set in place by the governments. Most of all, it will require greater public awareness and understanding of the issues.



The water primrose (Ludwigia peploides/grandiflora) is a South American species that has become highly invasive in France. There is currently research being carried out in Britain to see how best we can eradicate the few wild populations here before it becomes a serious problem.

Introduction

Expected benefits of a more preventative approach:

This Strategy is intended to deliver a more balanced focus between reactive management and a more preventative approach, and to make better use of existing resources in order to reduce future ecological, economic and financial pressures caused by invasive species.

In 2006 an audit of responsibilities was commissioned across the governments, agencies and local government. It identified 101 business units with some responsibility for non-native species. Business units included entire departments, key divisions within departments, non-departmental public bodies and executive agencies. An important finding was that significant resources are devoted to non-native species issues – some directly targeted at the issues and some through other functions or responsibilities. The audit did not include non-governmental bodies.

Amongst these business units, time spent on dealing with non-native species issues ranged from less than 5 to over 22,000 hours per year. In Scotland it was estimated that approximately £450,000 per annum is spent by five key business units on plant health issues. The Forestry Commission spends approximately £400,000 per year across Great Britain on plant/tree health and Defra's Plant Health Division spends in the region of £10 million per annum, most of which is related to non-native species issues. The audit also estimated that over £2.1 million was spent on non-native species issues by key research units in 2005.

The audit re-affirmed the need identified by the 2003 policy review group for greater strategic cohesion and a clearer sense of common goals to secure more effective use of these resources. The need for the key measures proposed in this Strategy is further reinforced by the findings of the audit.

With notable exceptions such as the plant health regimes, the 2006 audit found that generally very little effort is currently focussed on preventative risk management, even though a number of new potentially invasive non-native species have been identified. However, the shift towards a more preventative approach can be usefully illustrated in the case of the South American water primrose – *Ludwigia grandiflora*. The Great Britain Non-Native Species Programme Board commissioned early research in 2006 into effective eradication methods for the known populations of this plant at a cost of just under £10,000. In France, it has already become extensively established costing several million Euros per annum to control and there is little prospect of eradication. The combined annual cost of controlling other non-native aquatic plant species in GB (floating pennywort, parrot's feather and Australian swamp stonecrop) has been estimated at over £3 million per annum.

This importance of early detection and action is evident and the pace at which country-wide eradication can become untenable is illustrated with Japanese knotweed – one of the best known established invasive non-native plant species that continues to impose costs on many sectors. Research has estimated that in Wales alone, it would have cost £53.3 million for a three year eradication programme had it started in 2001, but the cost would have been £76 million for such a programme starting in 2007.

Whilst control action will remain necessary in respect of established invasive species, unless a conscious decision is made to pursue wholesale eradication, the emphasis in this Strategy on preventative measures and more rapid, targeted action involves investment now to reduce or avert far larger future pressures and costs from invasive non-native species.

2 Strategic Aims

2.1 The overarching aim of this Strategy is to minimise the risk posed, and reduce the negative impacts caused, by invasive non-native species in Great Britain.

More specifically the aims of this Strategy are:

- to improve overall clarity and co-ordination of responsibilities and functions within government and its associated bodies;
- to achieve increased awareness of non-native species issues and promote appropriate changes in behaviour or attitudes throughout all relevant sectors;
- to reduce and where possible, prevent the intentional and unintentional introduction of invasive non-native species;
- to ensure that effective contingency response capabilities are in place and resourced to prevent the establishment of new invasions where possible;
- to help ensure that sustainable action to control established invasive non-native species is adequately resourced and delivered;
- to provide an effective decision-making framework and associated communications processes concerning control, mitigation and eradication of invasive non-native species;
- to improve co-ordination of actions to tackle invasive non-native species in partnership with key interest groups outside government;
- to make optimum use of available capacity and resources to improve detection and monitoring capabilities; and,
- to identify gaps and priority issue areas for further development (for example in relation to prevention, monitoring, control and legislation).

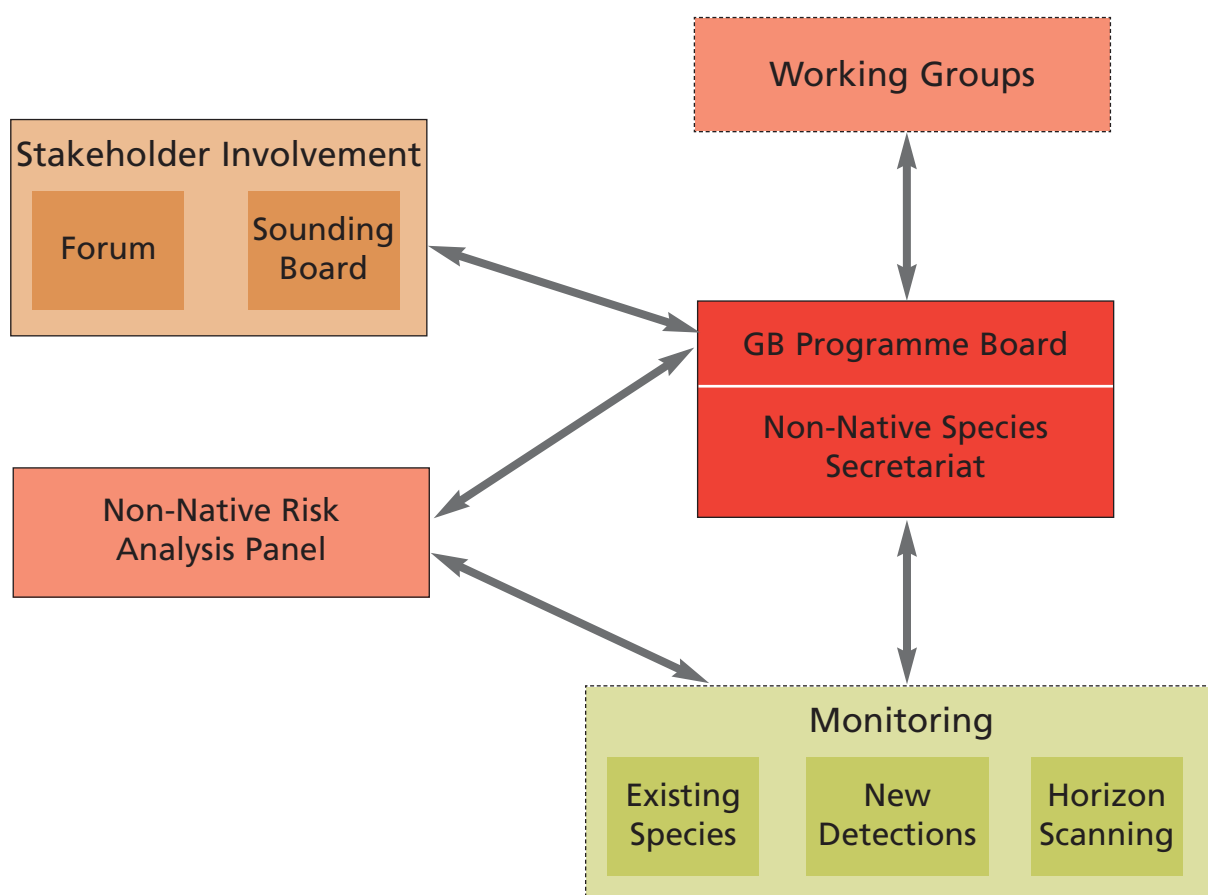
2.2 Invasive non-native species are recognised as a threat to biodiversity on a global scale with Decisions concerning this issue arising from the fifth, sixth, seventh and eighth conferences of the parties to the Convention on Biological Diversity (CBD). This Strategy takes note of those Decisions but sits within a European context in particular and has therefore had specific regard to the European Strategy on Invasive Alien Species^{iv} developed in 2003 under the Bern Convention. It also takes account of objective 5 of the “EU Action Plan to 2010 and Beyond”^v which was annexed to the European Commission’s 2006 Communication on Halting the Loss of Biodiversity by 2010 – and Beyond^{vi}. That objective calls on Member States to develop national strategies on invasive alien species and also calls upon the European Commission to develop a EU Strategy.

3 Scope and Terminology

- 3.1 This Strategy aims to address invasive non-native species issues on a GB basis and a parallel exercise is underway in the island of Ireland. Great Britain and Ireland are distinct geographical entities for this purpose; with the seas around our coasts creating a natural barrier to the movement of many species and enabling a clear focus on a geographical area. Cross-border co-operation between the administrations within GB is therefore essential for a sound ecological and ecosystem approach to tackling invasive non-native species. The 2003 policy review was conducted on a GB basis and this Strategy maintains that approach. We recognise, however, that there is a need for appropriate linkage with the all-Ireland approach to tackling invasive non-native species as this is developed.
- 3.2 Although this Strategy relates to Great Britain, it recognises that issues will arise at both national and more local levels. Particular species and priorities will vary between the different constituent countries, as well as between regions and localities. The Strategy will therefore guide action at governmental level and provide a high-level context for regional or local initiatives.
- 3.3 This Strategy uses the same definitions as those used in the Review of Non-Native Species Policy (Defra, 2003)^{vii}, which considered terrestrial, freshwater and marine ecosystems and also recognised that species native to one part of a country can become invasive if introduced to areas outside of their natural range. The term 'non-native species' (NNS) is used throughout this document and is the equivalent of 'Alien species' as used by the Convention on Biological Diversity. Invasive non-native species (the equivalent of 'Invasive Alien Species'^{viii} or 'IAS') are broadly defined as species whose introduction and/or spread threaten biological diversity or have other unforeseen impacts.
- 3.4 This Strategy is concerned with the economic, environmental and social impacts of invasive non-native species in the terrestrial, freshwater and marine environments. Since invasive potential is not constant, the scope of the Strategy is therefore all non-native species of flora and fauna with the exception of genetically modified organisms (GMOs), bacteria and viruses. Its full effect, however, is aimed at those non-native species that are known to be invasive, or identified as potentially invasive. The Strategy does not aim to address issues related to human health, nor does it cover animal or plant diseases although there are some obvious cross-linkages to such areas and diseases may be introduced via non-native species. Relationships with some other key strategies are considered in Chapter 12 on Information Exchange and Integration.

4 The GB Non-Native Species Mechanism – Roles and Responsibilities

- 4.1 One of the key recommendations of the Defra Non-Native Species Review was that there was a need for a single co-ordinating body. This has been implemented by the creation of the GB non-native species mechanism that is made up of the Programme Board and its Secretariat in conjunction with a Risk Analysis Panel (NNRAP), a Stakeholder Sounding Board (SSB), the Stakeholder Forum and the creation of working groups as necessary. The importance of stakeholder involvement in this overall co-ordinating structure will be reflected in the use of working groups, the Sounding Board and the annual Stakeholder Forum and this will be facilitated by the Secretariat both directly and through its website. The remits and aims of these components of the mechanism are outlined in Annex 4.



Schematic diagram to illustrate the main components of the GB Non-Native Species Mechanism. The dotted borders indicate that these components are currently in the process of being established.

5 Strategic Approach

- 5.1 The three-stage hierarchical approach adopted by the Convention on Biological Diversity (CBD) details prevention, detection/surveillance and control/eradication as the three main ways of dealing with invasive species (with prevention given the highest priority). These principles are set out in the Guiding Principles annexed to decision COPVI/23 of the Conference of the Parties^x. This approach was adopted by the policy review group and this Strategy maintains this approach in combination with other relevant themes.
- 5.2 Implementation of various measures in this Strategy will require a clear lead responsible body. The three Governments will take the overall lead role in driving forward implementation of the Strategy – this will be done through the Programme Board. However, given the range of measures involved, we will also look to key governmental bodies with specific responsibilities and relevant expertise to play their part. These bodies will include the national statutory nature conservation bodies, the Joint Nature Conservation Committee, the Environment Agency, the Scottish Environment Protection Agency, the Forestry Commission and the plant health inspectors as well as others. We expect that many of the measures will need to be taken forward in partnership between the Governments and such bodies but also with key non-government stakeholders, including landowners and sectoral interest groups whose input and advice will be essential.

6 Prevention

- 6.1 The Convention on Biological Diversity Guiding Principles place an emphasis on prevention measures on the basis that this is better than cure. This will maximise the potential reduction in adverse impacts and the costs associated with tackling invasions once they achieve a foothold. It is the least environmentally damaging intervention, and can, with adequate resources, be applied to a greater or lesser extent across the whole spectrum of species over the long term. It should therefore be given high priority. Great Britain, as an island, has a substantial advantage over continental countries in imposing effective prevention measures in relation to terrestrial and freshwater species, but we are of course more vulnerable than some to marine invasions.
- 6.2 There is a wide range of potential preventative tools and measures which can include risk assessment/analysis techniques, information and public education campaigns and promotion of high biosecurity standards within the trade, transport and development sectors. Effective prevention needs to focus on minimising the risk of introduction presented by all existing pathways and vectors, including transport of agricultural products, freight, trade in commodities and goods by post and courier services, repatriation of military and aid vehicles, aquaculture, ships' ballast water and movement of travellers by both sea and air, and of course land, now that GB is linked to mainland Europe by rail.
- 6.3 Given the increasingly global aspects of trade and movement of individuals, and therefore the wide range of potential introduction pathways, a completely watertight system is simply not achievable. It is evident therefore that robust risk assessment and effective horizon scanning are essential to enable the effective targeting of resources to address the most serious risks.
- 6.4 It should also be borne in mind that, whilst the primary focus is on preventing the introduction of invasive non-native species into GB, the same principles and standards of behaviour and vigilance are also important to prevent the assisted spread of species outside their natural range within GB. Some native species pose an invasive threat when translocated, for example, introducing species onto islands where they do not naturally occur. However, natural range extensions will not be impeded. The same considerations also apply to discouraging the movement of species from GB that may become invasive non-native species elsewhere.



Discouraging travellers from bringing unwanted products into the country can be an efficient and cost-effective way of preventing invasive species entering the country.

Prevention

- 6.5 It is critical that the legislation exists to underpin whatever preventative measures are necessary. As EU Member States work towards implementing national invasive species strategies by 2010, it may be necessary to consider measures that will need to be integrated and compliant with rules on free movement of people and goods. EU Member States are bound by Articles 28 and 29 of the EC Treaty, which prohibit restrictions on imports and exports between Member States. However, there are some exceptions allowed by Article 30 of the EC Treaty; these include restrictions that protect the life and health of humans, animals and plants, and may therefore be applicable to certain invasive non-native species.
- 6.6 While the World Trade Organisation (WTO) tries to ensure through the WTO Agreement on Technical Barriers to Trade and the Sanitary and Phytosanitary Agreement that unnecessary obstacles to free trade are prevented, they do recognise a country's right to prevent trade where it may affect human, animal or plant life or health. It is worth noting that proportionate measures will often prevent damage to trade and economic interests in addition to that of safeguarding biodiversity. Trade and movement issues will be discussed between Member States and the European Commission in the context of developing an EU Strategy.

Objective

To minimise the risk of invasive non-native species entering and becoming established in GB, and reduce the risks associated with the movement of species outside their natural range within GB.

Key actions

We will:

Key Action 6.1

increase awareness of the importance of the 'preventative approach' in addressing the threats posed by invasive non-native species;

Key Action 6.2

promote better access to information about invasive non-native species – especially for sectors and interest groups involved in key pathways;

Key Action 6.3

develop a robust risk assessment process for use on species, pathways and habitats;

Key Action 6.4

charge the Risk Analysis Panel with applying the risk assessment process to identify the pathways that present the highest risks for entry of non-native species into GB, and to undertake a horizon scanning function;

Key Action 6.5

through the use of working groups or lead bodies draw up action plans (where necessary) for specific pathways (Pathway Action Plans – PAPs) to minimise the risks associated with them;

Key Action 6.6

use the risk assessment process to identify the highest impact species that are most likely to enter and establish themselves in GB (for example produce high, medium and low risk list);

Key Action 6.7

through the use of working groups or lead bodies draw up individual action plans (where necessary) for species/groups identified as presenting particular risk, (Invasive Species Action Plans – ISAPs), to minimise the risks associated with them;

Key Action 6.8

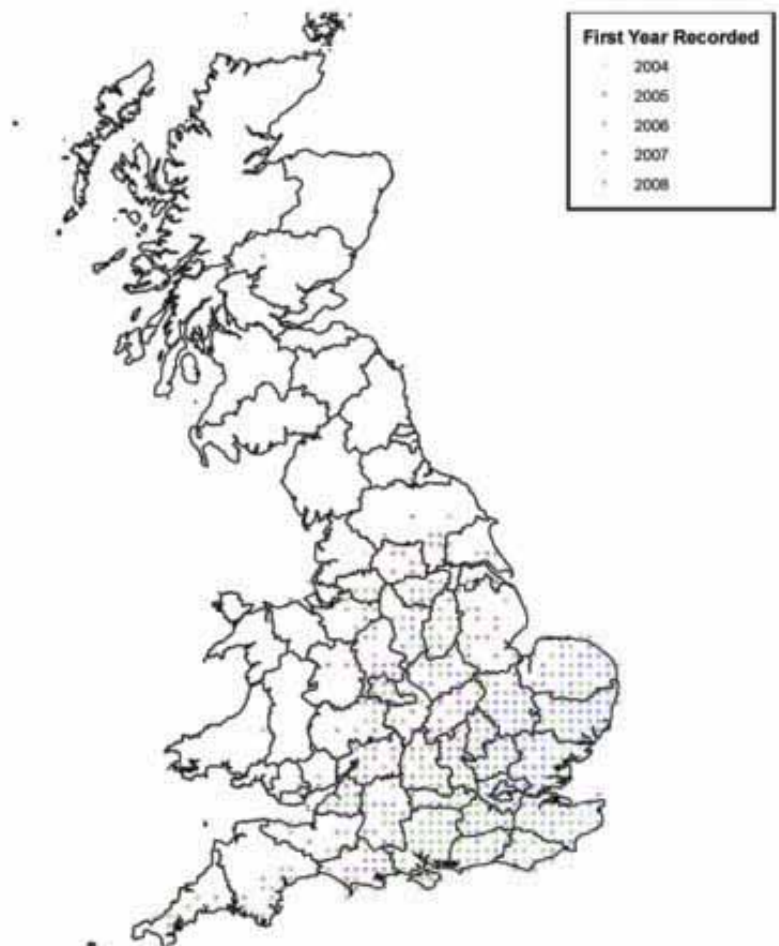
make appropriate use of existing legislative powers, for example, to prohibit the sale of species which present the highest risk, and issue or approve codes of practice or guidance that promote responsible behaviour and which can be taken into account in any enforcement proceedings; and,

Key Action 6.9

ensure awareness and education measures are taken to help prevent potentially harmful impacts arising from escapes/releases of species outside their natural British range (especially onto islands or between river catchments).

7 Early Detection, Surveillance, Monitoring and Rapid Response

- 7.1 Measures designed to prevent the introduction of invasive non-native species into Great Britain will not be completely successful in every instance given the nature of the pathways and associated risks. This would be the case even if resources were unlimited. It should also be borne in mind that many of the current invasive non-native species were introduced long ago. There may therefore be species present today that have not yet clearly demonstrated their invasive capacity.
- 7.2 It is important that the presence of known invasive non-native species, (and non-native species whose invasive potential is not yet known) is detected early, and the risks they pose are rapidly assessed. The sooner action is taken to address any threat, the greater the chance of success and the less costly it will be both in terms of biodiversity and other resources. Vigilance across a wide spectrum of taxonomic groups at and close to points of entry is key to enabling early detection of new arrivals.
- 7.3 It is also important that there is surveillance of species that are known to be present and potentially invasive to assess whether their status (population levels and/or range) is changing.
- 7.4 Britain has well-established monitoring schemes for many taxonomic groups but non-native species tend to be under-recorded and the time intervals used for monitoring are often too long to detect significant changes in their status early enough. Furthermore, coverage is often incomplete and the existing data are scattered amongst various agencies, institutes, NGOs, universities and individuals. Co-ordination of data collection and data-holding mechanisms is a high priority. Regular reporting will also be needed to inform policy makers and those delivering action programmes as well as to provide feedback to those providing the data.



Map shows spread by first year recorded for each 10km square for the Harlequin ladybird (*Harmonia axyridis*). [www.harlequin-survey.org]. Access to up-to-date information on the distribution of non-native species is very important for underpinning policy decisions.

Early Detection, Surveillance, Monitoring and Rapid Response

- 7.5 There needs to be sufficient operational capacity and resources to deal with invasive species soon after their detection and the identification of the risk they pose. Clearly understood channels of communication and decision-making as well as mechanisms for prioritisation are required. There is therefore a need for close interaction between the monitoring agencies, various non-governmental bodies, risk assessors and managers and those ultimately committing resources to ensure that any decision to take action is proportionate to the level of risks identified and makes the best use of available resources.
- 7.6 We should be guided in this by the Convention on Biological Diversity's precautionary approach^x so that where the risk assessment process concludes that a non-native species represents or is likely to represent an ecological, social or economic threat, action should be taken to eradicate it or prevent its further establishment or spread.
- 7.7 There is also a need to be mindful of differing priorities at different scales. This Strategy aims to set out a high level framework for action and a better context for individual initiatives operating below the GB level by indicating GB-level priorities. These may coincide to varying degrees with more immediate local priorities but, where the presence of any invasive non-native species is detected and an effective and rapid response on a local scale is feasible, this is to be strongly encouraged. However, where local action/resources are insufficient to deal with the threat, the measures set out in this Strategy will set the context for considering whether action should be instigated by the Programme Board.

Objective

To develop effective mechanisms for detection, surveillance, monitoring and responding to any invasive threats posed by both new and established non-native species.

Key actions

We will:

Key Action 7.1

develop an 'early warning system' for both flora and fauna, similar to the alert system currently operated by the European and Mediterranean Plant Protection Organisation (EPPO) for plant health threats;

Key Action 7.2

identify the highest priority known, and potentially, invasive non-native species that should be subjected to the most intensive monitoring;

Key Action 7.3

maximise the use of existing information sources and develop, over time, suitable surveillance/monitoring schemes for known and potentially invasive non-native species;

Key Action 7.4

work closely with relevant conservation or taxon-specific bodies to develop ways to maximise detection, surveillance and monitoring capacity;

Early Detection, Surveillance, Monitoring and Rapid Response

Key Action 7.5

develop and agree protocols for surveillance and monitoring of species identified as potentially invasive;

Key Action 7.6

establish a central repository for holding data on non-native species distribution;

Key Action 7.7

establish a comprehensive mechanism for recording interceptions on significant introduction pathways; including developing protocols for gathering data on interceptions from a range of 'intercepting bodies';

Key Action 7.8

establish (and publicise) a means for capturing information on non-native species from any source, for example, by ensuring that information from museums, government laboratories, local authority pest controllers, universities and members of the public can be passed on to the data repository;

Key Action 7.9

consider the need for investment in training and making taxonomic expertise more widely available;

Key Action 7.10

identify appropriate means of securing adequate resources and capacity to carry out rapid responses to contingencies;

Key Action 7.11

establish a means for clearly designating lead agencies for rapid responses to different taxa and in different circumstances; and,

Key Action 7.12

develop a general contingency plan to include a risk assessment, mechanisms for flow of information and a protocol for rapid approval of emergency action.

8 Mitigation, Control and Eradication

- 8.1 A large number of non-native species are established in Great Britain and many of these are beneficial or have limited negative impact. For the minority of species that are having a substantial negative effect there are several options. One can attempt to mitigate their negative impacts (for instance by establishing refuges for threatened species), control the species or attempt eradication. Control may be achieved through a spectrum of action including containing a species in a limited area, preventing (or slowing) its spread and localised population reduction or eradication in particular areas.
- 8.2 Once an invasive species has become widely established, full-scale eradication is possible or cost-effective in only a minority of cases. The Millennium Ecosystem Assessment Reportⁱⁱ noted that common factors in successful eradication cases include particular biological features of the target species (for example, poor dispersal ability), early detection/response, sufficient economic resources devoted for a sufficient duration, and widespread support from the relevant agencies and the public. Geographical containment, for example, on offshore islands, is also an advantage offering the most realistic prospects for complete removal of a species. It is important to recognise that any action that is taken should be cost-effective and proportionate to the level of threat, as well as taking account of any possible consequences for native species.
- 8.3 We should be guided by the principle that, where there is evidence to suggest that a non-native species is having or is likely to have a substantial negative ecological, social or economic impact, eradication or control measures should be instigated providing that those measures are technically and financially feasible, acceptably humane and safe for people and native wildlife populations.
- 8.4 Much mitigation and control work is currently being carried out by a wide range of organisations in Britain. This work ranges from action at a very local scale (for example, in nature reserves or public amenity land), through catchment-scale or island-scale work, to work at a national or even international level. Some of the large-scale control carried out on invasive non-native species in Britain has been part-funded by the EU LIFE-Nature Programme. Examples include the ruddy duck and mink eradication programmes as well as several projects to control *Rhododendron ponticum*.



The Defra and EU LIFE funded Ruddy Duck eradication project is the largest project of its kind in Europe.

Mitigation, Control and Eradication

- 8.5 Control also involves individual land owners or managers in protecting their private interests and preventing nuisance for owners of neighbouring land. The focus of this mitigation and control action is often very site-specific but it is important that knowledge of best practice is shared and captured as a valuable resource, and that control is underpinned by a strong evidence-base (see the Research chapter below). Whilst the Governments and agencies should focus in particular on prevention measures, early intervention action and large-scale or national programmes; empowering and supporting land-owners and managers to minimise the impacts on their land through provision of advice and practical information will also be important. The GB Non-native Species Mechanism should also both encourage and support the establishment and work programmes of local or regional fora, such as the Tweed Forum and Cornwall Knotweed Forum. Several other fora are currently being established to investigate how best to achieve this co-ordinated management, and this relationship will need to be developed further over time.
- 8.6 It is generally agreed that there is a need to establish priorities for mitigation and control action at a GB level. Once decided, these can be reflected in local strategies, plans and initiatives, unless of course, these are already part of a co-ordinated programme.
- 8.7 A key outcome of developing and implementing a GB Strategy will be making the most of existing capacity and expertise, and closing as many gaps as possible through more effective co-ordination of existing management activities.

Objective

To minimise and manage the negative impact of established invasive non-native species in a cost effective manner.

Key actions

We will:

Key Action 8.1

agree, with the Risk Analysis Panel and key stakeholders, a set of guiding principles for assessing and identifying what action or range of actions is feasible in terms of containment, control or eradication;

Key Action 8.2

use the risk analyses to identify priority invasive species and priority impacted habitats for mitigation and control action at GB and/or national levels, including consideration of the feasibility of eradication programmes;

Key Action 8.3

designate lead bodies or working groups to draft management plans for the priority invasive species and impacted habitats, taking into account scope for integration with any relevant Invasive Species Action Plans (ISAPs) already created for prevention of introduction purposes;

Key Action 8.4

develop and resource key GB level action programmes that are cost-effective, evidence-based and proportionate to the threat level;

Mitigation, Control and Eradication

Key Action 8.5

establish mechanisms to embrace individual initiatives as contributions to coherent programmes of action on the high level priorities;

Key Action 8.6

acknowledge priorities at different scales (GB, national, regional and local), and encourage effective partnerships;

Key Action 8.7

draw together a database of projects to facilitate better information sharing and to make the best of opportunities for partnership working and other resource synergies; and,

Key Action 8.8

look for further ways to support individuals in tackling the problems caused by invasive non-native species.

9 Building Awareness and Understanding

9.1 With the exception of the key players, there is a limited understanding by the general public and many other organisations, including many of the diverse arms of government, of the threats posed by invasive non-native species. Improved awareness and understanding of the issues surrounding invasive non-native species is key to wider support for the relevant policies and programmes, and for engaging the public in decision-making. The public could play several roles, including modifying behaviours to help reduce the likelihood of introducing invasive non-native species or the risk of facilitating their spread, and assisting with their detection and monitoring.

9.2 As well as general awareness raising there is a need to be mindful of the diversity of target audiences (for example the general public and more informed audiences such as biological recorders or professionals in horticulture). These diverse audiences may have major differences in perception and response, and there will be different optimal ways of reaching them. A range of means for communicating with these different groups will need to be considered, including via representative bodies, websites, mass media, posters at points of entry, information leaflets, codes of practice, identification guides, public talks and face to face meetings.



Visually attractive information leaflets are a tool that is commonly used to help raise public awareness about the risks posed by non-native species.

9.3 It is important to monitor public attitudes to ensure that any action to raise awareness and encourage participation is having the desired effect. This will enable some measurement of the effectiveness and value for money of the measures employed. The collection of baseline information on current public awareness and understanding of non-native species issues is a key first step against which to measure future changes in attitude and perception.

Objective

To raise awareness of invasive non-native species issues among the general public and other key target audiences:

- so that there is a wider appreciation of the risks that non-native species can pose to our native wildlife and environment;
- to secure better understanding of action being taken concerning invasive non-native species and to gain public support for the decision-making process;
- to enable the public at large to assist in the detection and monitoring of invasive non-native species; and,
- to encourage responsible behaviour and strong adherence to regulatory and biosecurity measures affecting those involved in the movement, keeping, use and any release of non-native species.

Building Awareness and Understanding

Key actions

We will:

Key Action 9.1

undertake action to assess public attitudes and collect baseline information on public awareness and understanding of invasive non-native species issues;

Key Action 9.2

identify the role and the means by which the public can assist in detection, surveillance and monitoring;

Key Action 9.3

identify key audience groups and priorities for action to increase their awareness, understanding and engagement;

Key Action 9.4

establish a working group to develop a communications and media relations strategy which should include consideration of:

9.4a

the production and dissemination of information posters, identification guides and other general literature on key invasive non-native species and related issues;

9.4b

the production of regular bulletins to update key stakeholders on progress in addressing invasive non-native species;

9.4c

how to work better through partnerships, to disseminate information and raise awareness amongst important audiences;

9.4d

linkages and synergies with communications channels relating to pathways concerning human health and travel, wildlife health, trade, transport and so on;

9.4e

timing and targeting of communications, thematic campaigns and other suitable measures;

9.4f

education programmes in schools and colleges; and,

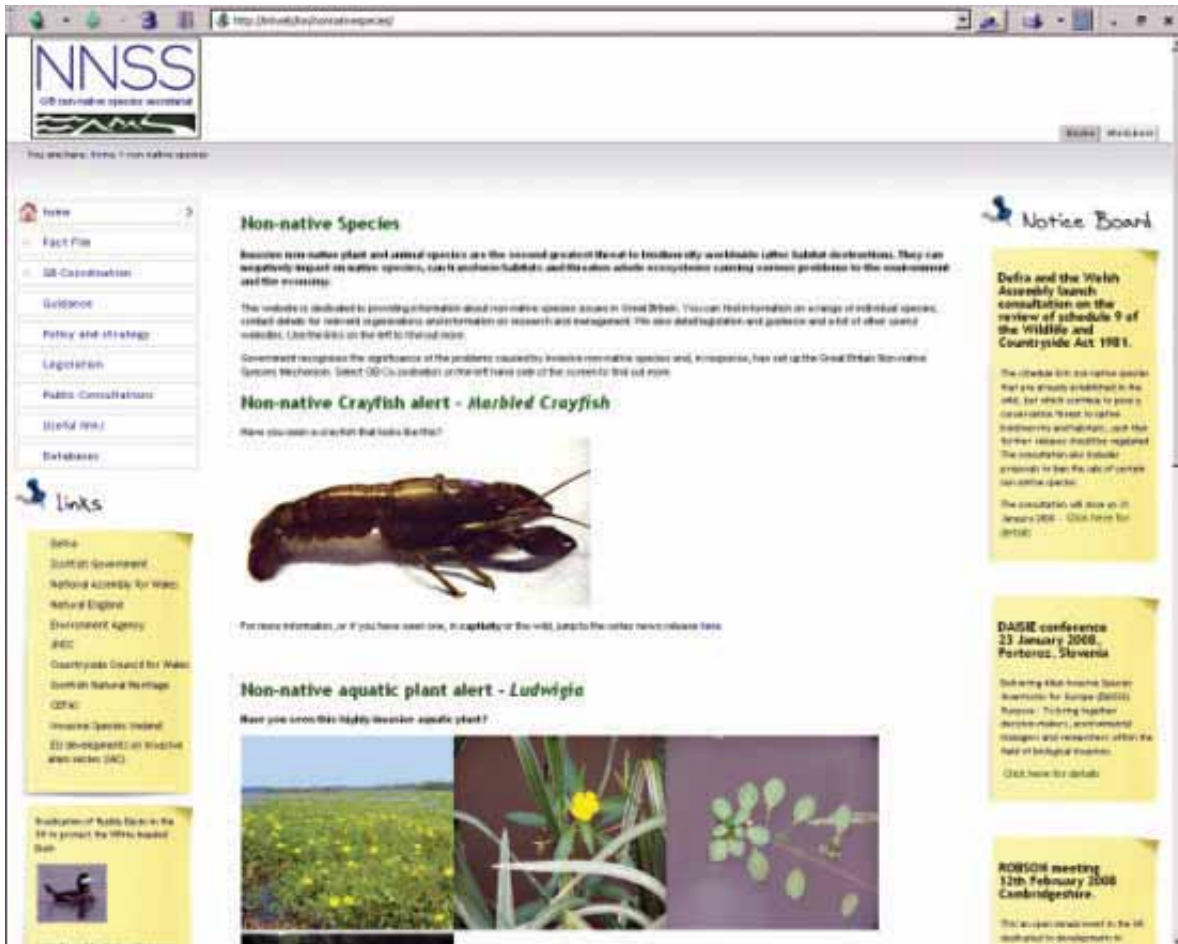
9.4g

linkages and synergies with other aspects such as the EU Wildlife Trade Regulation^{xi}, the Convention on Trade in Endangered Species and initiatives relating to wildlife crime;

Building Awareness and Understanding

Key Action 9.5

set up and maintain a Secretariat website on invasive non-native species issues which links to agencies, NGOs and others working on invasive non-native species. This will form a key source of information on governmental action and progress, and on other programmes and initiatives taking place within GB; and,



The front page from the non-native species secretariat website – the central information point for the GB Non-native Species Mechanism.

Key Action 9.6

produce, disseminate and implement Codes of Practice for the key pathways^{xii} and species identified by the risk assessment process and seek to monitor their effectiveness.

10 Legislative Framework

10.1 The existing legislative provisions dealing with non-native species in GB are widely dispersed over a large number of Acts and have historically developed in isolation to tackle specific problems. GB legislation is most comprehensive in areas of significant economic impact such as plant and animal health and fisheries. The legislation relating to non-native species in GB was extensively reviewed in 2001 (Fasham and Trumper, 2001^{xiii}) and is also summarised in the Review of Non-Native Species Policy (Defra, 2003ⁱⁱⁱ). Furthermore, legislation on nature conservation is a devolved matter and so co-operation is essential to devise a robust framework across GB.

10.2 Some useful and very specific measures were taken in the *Nature Conservation (Scotland) Act 2004* and the *Natural Environment and Rural Communities (NERC) Act 2006*, but there is still a need to create a better sense of cohesion across existing powers and a need for further improvements. The current arrangements whereby many powers are available for very specific purposes no longer serve us well in adopting a more comprehensive and co-ordinated approach to addressing invasive non-native species issues. For example, there may be scope for broadening the remit of the Plant Health Services to operate more widely outside the traditional concerns of threats to agriculture and horticulture from plant pests and diseases. This would reap the benefits of an existing infrastructure and national network.



Banning the sale of highly invasive species such as floating pennywort is possible under existing legislation.

10.3 A further factor to consider is that it is also possible that the development by the European Commission of an EU Strategy could include proposals for specific European legislation concerning invasive alien species which might then need to be transposed into domestic legislation.

Legislative Framework

Objective

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

Key actions

We will:

Key Action 10.1

build on the research done to date on the current legislation and develop a package of legislative proposals designed to provide a more coherent and comprehensive framework for tackling invasive non-native species. This will include:

- identifying the issues that need addressing most urgently and the legislative anomalies that most need remedy;
- seeking to rectify the most urgent legislative issues as suitable opportunities arise;

Key Action 10.2

make the most effective use of existing powers through better liaison and co-ordination between those bodies possessing relevant powers;

Key Action 10.3

contribute to the development of any EU level initiatives to improve legislation and controls relating to the threat posed by invasive non-native species; and,

Key Action 10.4

encourage strong awareness of invasive non-native species issues in communications between Member States and the different policy directorates in the European Commission.

11 Research

11.1 Invasion biology is currently an area of growing interest in the scientific community. Consequently, there is a large amount of research on non-native species occurring in GB: in universities, research institutes, government agencies and others. Funding comes from a wide range of sources and the research topics covered range from highly applied through to fundamental research on invasion biology. Some of this body of research is focussed on the UK while there are several initiatives which involve research at the EU or a more global level; for example, the DAISIE^{xiv} and ALARM^{xv} projects.

11.2 Research is a key area in relation to invasive non-native species. It is vital that we underpin policy with a strong evidence base and research outcomes will often be a key component helping to inform risk assessment, surveillance, detection, monitoring, control and eradication strategies. Applied research is particularly important to help inform and refine control methods as well as for assessing the feasibility of proposed action (for example, eradication attempts). Feasibility studies, often involving modelling, are a key tool for assessing the likely costs and probability of success for larger-scale control or eradication efforts.



*Research, such as the genetic research on the threat to native bluebells (*Hyacinthoides non-scripta*) from the Spanish bluebell (*Hyacinthoides hispanica*), is vital for informing both policy and practice on non-native species.*

11.3 Research could also provide technological or biological control solutions to help address problems that have hitherto seemed intractable.

11.4 The non-native species policy review group considered research priorities and the Monitoring and Risk Assessment Sub-Group produced a list of research needs (Defra, 2003ⁱⁱⁱ). More recently, the UK Biodiversity Research Advisory Group (UK BRAG) non-native sub-group has given strategic consideration to a series of research priorities for non-native species for the UK^{xvi}. There is a need for better strategic co-ordination of this research effort involving all the key research funders, including government departments, statutory nature conservation bodies as well as the relevant Research Councils.

Research

Objective

To encourage a more strategic and coherent research stream to underpin GB invasive non-native species policy and action.

Key actions

We will:

Key Action 11.1

underpin all risk assessment, prevention, detection, surveillance, monitoring and management with the highest quality science available;

Key Action 11.2

seek to secure funding for the research priorities identified in the Defra review and by UK BRAG;

Key Action 11.3

encourage collaborative research projects and wide access to results; and,

Key Action 11.4

monitor developments in research nationally and internationally to detect technological or biological advances and to ensure that GB research on invasive non-native species is cutting edge and avoids duplication of research elsewhere.

12 Information Exchange and Integration

- 12.1 There is a large volume of work being carried out on invasive non-native species across a range of sectors within Britain and effective overall information exchange presents a challenge. The dissemination of best practice among practitioners is necessary both to ensure the efficient use of resources and to ensure that lessons learned in one area or circumstance are beneficial elsewhere. In addition it will be important to ensure that research as described in Chapter 11 is widely disseminated. Synergies between this Strategy and other strategies relating to the Plant Health Service and wildlife disease surveillance should also be pursued and strengthened, as well as any with initiatives on illegal imports and human health.
- 12.2 On the international aspect, this Strategy takes account of the European Strategy on Invasive Alien Species (Genovesi and Shine, 2003^{iv}). Through appropriate contacts and representatives, there is also UK participation in for example, the Bern Convention's relevant Experts Group, discussions with the European Commission on an EU Strategy, development of international biodiversity indicators, invasive alien species deliberations of the Convention on Biological Diversity and the work of the invasive alien species panel of the European and Mediterranean Plant Protection Organisation (EPPO). The GB Secretariat also maintains close links with the all-Ireland non-native species initiative.
- 12.3 Keeping up to date with best practice abroad is important to maintaining the best mechanisms for combating invasive non-native species in Britain. Furthermore, as a global problem, links with other global networks and initiatives such as the Global Invasive Species Programme (GISP) and the World Conservation Union's Invasive Species Specialist Group (IUCN ISSG) are also important. Best practice developed in the UK might also be used to help initiatives on invasive non-native species overseas such as contributing to target 10 of the Global Strategy for Plant Conservation (management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems).
- 12.4 There are a number of strategies, existing or planned, with which this Strategy will share a relationship, some of the key ones are outlined in Annex 5.

Information Exchange and Integration

Objective

To ensure the GB non-native species mechanism keeps up to date with invasive non-native species developments domestically and engages with developments internationally.

Key actions

We will:

Key Action 12.1

maintain links with other relevant Government initiatives and strategies within GB through policy representation;

Key Action 12.2

engage with and share information with all-Ireland initiatives on invasive non-native species;

Key Action 12.3

ensure that the UK Overseas Territories and Crown Dependencies are kept informed of GB developments;

Key Action 12.4

maintain contact with colleagues dealing with invasive non-native species policy issues in other European Member States and encourage consistent representation of issues of concern to GB/UK;

Key Action 12.5

engage with global/international initiatives on invasive non-native species; and,

Key Action 12.6

through the work of the GB non-native species mechanism in driving a coherent strategic approach, help regional or local fora that seek to disseminate best practice and promote evidence-based action on invasive non-native species.

13 Implementation and Review

- 13.1 Given the range of actions and spatial and temporal variations as regards different priorities for action across Great Britain, there will be aspects of this Framework Strategy taken forward at the GB level, for example, risk analysis and horizon scanning, and others which may be best left to the individual countries, such as specific education campaigns and targeted initiatives. The GB Programme Board will provide the mechanism for maintaining the strategic overview and promoting GB level initiatives.
- 13.2 We will develop an action plan to guide implementation of the Strategy and ensure that progress is reported on the GB Non-Native Species Secretariat website.
- 13.3 It is also important that the implementation and success of this Strategy is reviewed periodically to ensure that it is working effectively and that the measures set out in it are sufficiently flexible to adapt or respond to changing circumstances. The Programme Board will evaluate the Strategy on a five-yearly (quinquennial) basis.

Annex 1 – International Commitments Concerning Invasive Non-Native Species

The UK Government has entered into several commitments concerning action to tackle the threats posed by invasive non-native species. These include:

1. The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention^{xvii}):
 - under Article 11 – each Contracting Party undertakes to strictly control the introduction of non-native species;
 - the Convention's European Strategy on Invasive Alien Species (Genovesi and Shine, 2003)^{iv} has informed the development of the GB strategy.
2. The Convention on Biological Diversity (CBD)^{xviii}:
 - under Article 8h, each Contracting Party undertakes to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;
 - several Decisions have been adopted under the Convention that refer to invasive alien species:
 - Decision V/8^{xix} on matters including development and implementation of national strategies and action plans; mechanisms for transboundary co-operation; using the ecosystem approach and precautionary and biogeographical approaches, and developing education, training and public awareness;
 - Decision VI/23^{xx} on matters including urging parties to ratify the International Plant Protection Convention; urging the International Maritime Organisation to complete the preparation of an international instrument to address the introduction of harmful aquatic organisms in ballast water and to develop mechanisms to minimise hull-fouling as an invasion pathway; reaffirming the importance of national and regional strategies; urging the creation of mechanisms to co-ordinate national programmes; facilitation of stakeholder involvement; development of risk assessment/analysis capacity, and importantly, adopting the Guiding Principles;
 - Decision VII/13^{xxi} on matters including collaboration with the Convention on International Trade in Endangered Species (CITES); developing joint work plans with the International Plant Protection Convention; establishing closer links with the World Organisation for Animal Health (OIE) and supporting decision-making and rapid response through development of risk analysis capacity – noting the potential for wider application of existing risk assessment methodologies;
 - Decision VIII/27^{xxii} on matters including capacity-building for developing national action on introduction pathways; encouraging inter-agency collaboration at national and regional levels over introduction, control and management, for example through national co-ordination committees and increasing public awareness. The Decision also contains sections on a number of specific areas including aquaculture/mariculture, ballast water, biofouling/hullfouling, civil air transport, tourism and inter-basin water transfer.

International Commitments Concerning Invasive Non-Native Species

3. The Ramsar Convention on Wetlands of International Importance^{xxiii} especially as Waterfowl Habitat:
 - under Article 3, each Contracting Party undertakes to formulate and implement their planning so as to promote the conservation of the wetlands designated under the Convention, and as far as possible the wise use of wetlands in their territory;
 - Resolution VII/14^{xxiv} concerns invasive species and wetlands and calls for inventories of invasive species; prioritised programmes to control or eradicate invasive species, and a review of existing legislation to prevent the introduction of new and environmentally dangerous alien species and the movement or trade of such species within the jurisdictions of Contracting Parties.
4. The UK Government is also obliged under article 11 of the EU Birds Directive^{xxv} and article 22 of the Habitats Directive^{xxvi} to have certain regulatory measures in place concerning the introduction of non-native species.
5. In 2001 the Governments of European Union Member States agreed to halt the decline of biodiversity in the EU by 2010^{xxvii}; tackling deleterious non-native species is a key part of this commitment. The Message from Malahide and the 2006 Communication^{vi} from the European Commission on halting the loss of biodiversity urge Member States to produce national strategies for tackling invasive non-native species by 2007, and have them implemented by 2010.

Annex 2 – Key Recommendations From “Review Of Non-Native Species Policy: Report Of The Working Group”, Defra, 2003.

Key Recommendation 1:

The Government should designate or create a single lead co-ordinating organisation to undertake the role of co-ordinating and ensuring consistency of application of non-native species policies across Government.

Key Recommendation 2:

Develop comprehensive, accepted risk assessment procedures to assess the risks posed by non-native species and identifying and prioritising prevention action.

Key Recommendation 3:

Develop codes of conduct to help prevent introductions for all relevant sectors in a participative fashion involving all relevant stakeholders.

Key Recommendation 4:

Develop a targeted education and awareness strategy involving all relevant sectors.

Key Recommendation 5:

Revise and update existing legislation to improve handling of invasive non-native species issues.

Key Recommendation 6:

Establish adequate monitoring and surveillance arrangements for non-native species in Great Britain.

Key Recommendation 7:

Policies should be established with respect to management and control of invasive non-native species currently present or newly-arrived in the wild, and operational capacity be developed to implement these policies.

Key Recommendation 8:

Stakeholders should be fully consulted and engaged in development of invasive non-native species policies and actions through a mechanism such as a consultative forum.

Annex 3 – The Great Britain Invasive Non-Native Species Framework Strategy Working Group

The working group developed the draft Strategy between March and November 2006, working by e-mail and holding three meetings.

Members:

Steve Ashby	Plant Health Division, Defra
Michelle Calnan	Welsh Assembly Government
Jim Collins	Pet Care Trust
Keith Davenport	Ornamental Aquatic Trade Association
David Gilchrist	Horticultural Trades Association
Matthew Hartley	Surveillance, Zoonoses & Emerging Issues Division, Defra
Deborah Long	Plantlife (representing Scottish Environment Link)
Ian MacLean	Joint Nature Conservation Committee
Tony Mitchell-Jones	Natural England
Niall Moore	Non-native Species Secretariat
Diane Owen	Non-native Species Secretariat
Lynn, Raw	Institute of Animal Health Veterinary Unit, Defra
Trevor Renals	Environment Agency
Diana Reynolds	Welsh Assembly Government
Pete Robertson	Central Science Laboratory
Angela Robinson	Scottish Executive Environment and Rural Affairs Department
Peter Starling	HM Revenue and Customs
Neil Strong	Network Rail
Chris Sydes	Scottish Natural Heritage
Huw Thomas	Wildlife Species Conservation Division, Defra (Chair)
Jeff Waage	Imperial College London
Victoria Waite	Department for Transport
Paul Walton	RSPB (representing Wildlife and Countryside Link)
Ruth Waters	Natural England

Corresponding members:

Dominic Counsell	Scottish Natural Heritage
Bob Davidson	Environment and Heritage Service, Department of Environment for Northern Ireland
Brian Elliott	Maritime and Coastguard Agency
Andy Jones	Countryside Council for Wales
Peter Macnab	HM Revenue and Customs

Annex 4 – The Great Britain Non-Native Species Mechanism

The Non-Native Species Programme Board

The Programme Board was established in September 2005. It consists of senior representatives from across the Governments of England, Scotland and Wales and their agencies, each representing a range of interests.

Its aims are to:

- agree, develop and implement a GB-wide Strategy on non-native species;
- steer and give strategic direction to work undertaken across government on non-native species;
- establish working groups as a means to investigate specific issues, develop proposals and secure stakeholder input;
- decide on what action to take in response to working group feedback; and,
- agree clear priorities for action and drive implementation of the Strategy.

The Programme Board will be the key operational decision-making body on implementation of this Strategy.

The Non-Native Species Secretariat

The Non-Native Species Secretariat was set up in March 2006. Its principal role is to support the Programme Board in achieving its aims. The Secretariat reports to the Programme Board and is the main link between the Programme Board and the other components of the mechanism and wider stakeholders. It will, for example, maintain the annual Stakeholder Forum process that has been instigated.

The Secretariat will play a pivotal role in relation to delivery of actions instigated by the Programme Board, for example establishing working groups to examine specific issues and providing secretarial support for the risk analysis panel. The Secretariat will also become a central hub for information gathering and dissemination concerning invasive non-native species and action being taken to tackle them. There is scope for the Secretariat to become a particularly fundamental link for all partners involved in the GB strategic approach and we will look to stakeholders to support it in developing this role.

The Secretariat will also establish and facilitate links with non-native species interests in Ireland, the UK Overseas Territories and Crown Dependencies and Europe in particular, but also more broadly overseas.

The Non-Native Species Risk Analysis Panel

This panel will be charged with the risk assessment and horizon scanning functions that will enable the Programme Board to make both strategic and more specific operational decisions on actions and resource allocation. It will consist of a central core panel of risk assessment experts with a suitably diverse knowledge base in relation to invasive species, and an outer circle of taxonomic experts and any other expertise identified as necessary to enable it to perform its functions. Individual risk assessments will be undertaken by subject experts and critically reviewed by the core panel before the approved assessment and any risk management options are submitted to the Programme Board for consideration. It may also be necessary for the Panel to review risk assessments from time to time as the state of knowledge improves.

The Great Britain Non-Native Species Mechanism

Working Groups

These will be established by the Secretariat on behalf of the Programme Board to examine specific issues or deliver specified outcomes and will operate for as long as is necessary. Each will have a remit, timeframe for reporting and a set of SMART objectives. They will be supported by the Secretariat and will report to the Programme Board.

The Non-Native Species Stakeholder Sounding Board

In order to facilitate timely interaction and consultation with key stakeholders on appropriate issues, which cannot be achieved so readily through the annual forum, an informal sounding board has been established. This consists of a range of stakeholders, who at the invitation of the Programme Board, have agreed to be consulted from time to time and to provide advice on a range of issues related to implementation of the measures set out in this Strategy.

Members of the sounding board are under no obligation other than to the extent they volunteer to participate. This mechanism is not a substitute for wider public consultation where that is appropriate but will help to ensure, for example, that any proposals put out to wider consultation have been carefully considered.

The Non-Native Species Stakeholder Forum

This will be held annually and will offer the opportunity for a stock-take on progress and emerging issues with stakeholders. It will provide an opportunity for discussion of high level strategic issues and another means for engaging stakeholders in the development of non-native species policy and objectives. It will help ensure the effective operation of the GB Mechanism and will also encourage debate and help facilitate information exchange.

Annex 5 – Key Related Strategies

Relationship with the Biodiversity Action Planning process

The UK Biodiversity Action Planning process (UKBAP) was set up in response to the Convention on Biological Diversity in 1992. 391 Species Action Plans (SAPs) covering 475 separate species and 45 Habitat Action Plans (HAPs) were prepared between 1995 and 1999 for priority species and habitats. Targets for these species and habitats were originally set at the UK level. The publication of revised targets in November 2006 disaggregated these to country level for the first time. Following a 3-year review of the priority list, involving over 500 experts, a revised UK Priority Species and Habitats list was approved by ministers of all four UK administrations and published in August 2007. This new list contains 1149 species and 65 habitats.

The operation of UKBAP over the past 15 years has resulted in significant gains in terms of biodiversity conservation, but delivery of actions under SAPs and HAPs alone will not be sufficient if we are to achieve the 2010 EU biodiversity target of halting the loss and reversing the decline in biodiversity. Consideration is now being given to development of delivery mechanisms which would benefit particular habitats, or groups of habitats, at a landscape/ecosystem scale for the benefit of multiple species, whilst recognising that some species may still require targeted action. This approach is reflected in "Conserving Biodiversity – The UK Approach" published in October 2007. This document is a strategic statement which recognises the strengths of partnerships and sets a framework with the flexibility to tackle issues at the most appropriate spatial scale. The threat from invasive species is acknowledged within the document as a cross-cutting issue that we must address.

In addition, responsibility for biodiversity conservation has been devolved to the country administrations. Individual countries have their own biodiversity strategies which set out a vision and approach for each geographic area.

Invasive species can impact on anything from a single or small number of native species to entire habitats, and from a localised area to a widespread one. The focus of action to address invasive species might therefore be variously placed within a national approach to tackling invasive species, within more locally targeted invasive species or broader biodiversity action plans or also in a particular HAP or SAP, and the approach taken will need to take account of these mechanisms. These mechanisms also offer a further vehicle through which to highlight the issue of invasive non-native species.

Reflecting the importance of the topic, the Biodiversity Indicators in Your Pocket publication (<http://www.jncc.gov.uk/default.aspx?page=3921>) includes an indicator (currently under development) for invasive species within focal area 3, Threats to Biodiversity.

The national biodiversity strategies can be found at the following links:

England:

"Working with the grain of nature: a biodiversity strategy for England"
<http://defraweb/wildlife-countryside/biodiversity/biostrat/index.htm>

Scotland:

"Scotland's Biodiversity: It's in Your Hands – A strategy for the conservation and enhancement of biodiversity in Scotland"
<http://www.scotland.gov.uk/Publications/2004/05/19366/37239>

Wales:

“The Wales Biodiversity Framework”

This document has been created by the Wales Biodiversity Partnership (WBP) as a first-step guide to:

- identifying the key practical, policy and legislative drivers for protecting and enhancing biodiversity in Wales;
- outlining the mechanisms for promoting positive action;
- explaining the roles and remit of those responsible for delivering biodiversity action; and,
- providing links to the tools and information to help maintain and improve biodiversity in Wales.

<http://www.biodiversitywales.org.uk/english/Library/default.aspx?pid=1>

Plant Health Strategy

The 2003 non-native species policy review recognised that some of the measures necessary to prevent, control or eradicate non-native species were already in place in the plant health sector. In particular, the risk assessment techniques developed by the European and Mediterranean Plant Protection Organisation were seen as open to adaptation in order to apply more widely to non-native species.

In 2005, a Plant Health Strategy for England was adopted following wide consultation, and this recognised the threat posed by plant pests to the natural environment, both through direct and indirect damage.

The Plant Health Strategy noted that in the course of inspections of imports plant health inspectors discover organisms that may be potentially illegal under the Wildlife and Countryside Act 1981. It recognised the need to clarify responsibilities in these circumstances and this will be taken forward as part of the implementation of the Invasive Non-native Species Framework Strategy and the consideration of possible legislative changes.

Because plant pests and diseases that come under the remit of the Plant Health Services in Great Britain are themselves non-native species, this aspect of prevention of entry, control and eradication of harmful non-native species is therefore already well covered. Implementation of the Plant Health Strategy therefore contributes directly to the overall aims of this Strategy.

GB Animal Health and Welfare Strategy

The Animal Health and Welfare Strategy is concerned with kept animals – animals which are, for one reason or another, under human control. This includes all farmed livestock; cats, dogs and other animals kept as companions or in zoos, and also the hatching and rearing of fish and shellfish for food or ornamental trade.

The Strategy aims to “develop a new partnership in which we can make a lasting and continuous improvement to the health and welfare of kept animals while protecting society, the economy, and the environment from the effect of animal diseases”.

Key Related Strategies

Under the direction of the Strategy, Government is working with industry and other stakeholders, in particular, to improve the way we monitor, assess and manage threats to the health of kept animals (and, from that, public health).

Non-native species are a potential threat to kept animals because of the exotic diseases they might bring into the country, or because, once they become established, they might act as a reservoir or vector of diseases for kept animals.

Risk analysis and horizon scanning is used to undertake assessments of disease threats. This is considered against the reasons for government intervention and a proportionate and appropriate response is actioned.

England Wildlife Health Strategy

The Wildlife Health Strategy will aim to ensure that the disease status of wildlife is considered and balanced with society's interests and responsibilities, including human health, economic activity, biodiversity, the health and welfare of kept animals, and the need for a responsible approach to human/wildlife interactions. It will also develop a proportionate, risk-based approach to wildlife health surveillance and management and, where appropriate, direct interventions. The implementation of the Strategy will ensure that the natural asset base is maintained and protected.

Key areas of the Strategy will focus on managing disease surveillance in wildlife, protecting from incursion of new diseases into UK wildlife, and consideration of the impacts of wildlife disease on biodiversity and conservation.

Whilst the Wildlife Health Strategy will concentrate on pathogens and the Invasive Non-Native Species Framework Strategy will concentrate on whole animals, there will clearly be important linkages where for example, a non-native species is the vector for a wildlife disease but is not having a detrimental ecological impact through its own physiological behaviour.

There will be a degree of common interest therefore in risk analysis and horizon scanning in respect of non-native species, surveillance and monitoring and possibly in capacity and procedures for rapid response. However, the chain of command as regards any interventions will be different and we will look to develop this relationship as the two strategies mature and are implemented.

Environment Agency draft Strategy – “Restoring the balance”

This document sets out the Environment Agency's proposed contribution to the Invasive Non-Native Species Framework Strategy for GB. It highlights the need for rapid response when invasive non-native species are first detected and a risk-based, sustainable approach for managing those species that are feasible to contain or control. The role of the Environment Agency is described in terms of its legal responsibilities, species of concern, management action and advisory activities. Local and regional partnerships to deal with problems, share knowledge and implement good practice are advocated to maximise the chances of successful outcomes.

International Convention for the Control and Management of Ships' Ballast Water and Sediments, and the Ballast Water Management Strategy for North West Europe

The 2003 Defra review report noted that one of the main marine pathways for introduction of non-native species is that of ships' ballast water and the exchanges of water that are necessary to ensure safe operation of ships.

Significant work is being undertaken on minimising or removing the risk of introducing non-native species to receiving waters through ballast water discharges by the International Maritime Organization (IMO). The International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ship's Ballast Water and Sediments, (the 2004 Ballast Water Management Convention). This requires that discharge of ballast water shall be conducted only through Ballast Water Management in accordance with the provisions of the Annex to the Convention. The IMO has also developed a series of guidelines to support this Convention, such as guidance for designating ballast water exchange areas, ballast water reception facilities and guidelines on management and emergency situations. The Convention has stimulated the development of a range of technologies and management systems that will reduce the risk of non-indigenous species invasion through ballast water. The IMO Convention measures are expected to come into force in 2009 and to be implemented through to 2016.

Through the involvement of the Maritime and Coastguard Agency, the UK Government will maintain its involvement in the work being done under the IMO and will continue to play a leading role in the development of an interim Ballast Water Management Strategy for North West Europe. This is being developed in cooperation with other countries in the OSPAR Region and will align with and foreshadow the relevant IMO developments. Phase 2 of the development of this Strategy is under way and will address a range of issues including risk assessment, management options, use of bioprovinces as management units, information gathering and a notification procedure for biological emergencies. It is also expected that the hull-fouling pathway will also be considered by the IMO in due course.

EC Water Framework Directive

Invasive alien species are not specifically mentioned in the text of the EC Water Framework Directive (WFD). However, both Annex II and Annex V indicate that they do need to be assessed, both as environmental 'pressures' and because they undermine 'naturalness', a key principle of the WFD. There are several important tasks that need to be undertaken if the problems of alien species are to be tackled effectively using WFD mechanisms. For example, ecological monitoring methods are needed that can track the presence and impact of invasive species; action plans are needed for alien species management within WFD programmes of measures; and agreement is needed on how alien species should affect the classification of ecological status. This last point is especially urgent in view of the work now under way to publish the first river basin management plans in 2009. In the UK this issue has been debated at length and a proposal has been put to the UK Technical Advisory Group for consideration. If implemented, this procedure would be used to modify classifications of water bodies at high and good status according to the presence and/or impact of certain alien species known to cause serious harm to native species and habitats.

The fact that the WFD is a European directive means that an EU position is needed on the way that the Directive deals with alien species issues. The European Commission's ECOSTAT group is beginning to examine these matters, including the use of alien species in ecological status classification, and the way that WFD 'programmes of measures' might be used to address some of the problems.

The Invasive Non-native Species Framework Strategy for GB, while not referring specifically to the Water Framework Directive, sets out a series of strategic aims that should be part of WFD implementation. These include prevention, early detection, mitigation, and building awareness. It is hoped that where non-native species are causing a lowering of the ecological status of water bodies under the WFD, such measures will be used to address the issues at a catchment level through a partnership of the relevant bodies.

Key Related Strategies

Scottish Natural Heritage Species Action Framework

The Scottish Natural Heritage (SNH) Species Action Framework (January, 2007) sets out a framework for the management of species in Scotland and provides a list of species for which clear, targeted action over the next five years could make the most difference to biodiversity. Four situations where species management may be appropriate to achieve biodiversity aims are described. These are: species conservation, invasive non-native species, conflicts of interest involving native species, and the sustainable use of species. The invasive non-native species included in the document are those species that are already established in Scotland and that are assessed as presenting the greatest risk to biodiversity of high conservation value.

Actions on the listed invasive non-native species may include control of individuals to reduce their population or limit their spread, or efforts to modify the human activity contributing to their spread (through enactment or enforcement of legislation, voluntary agreements or through education and promotion of codes of practice). Implementation of this Framework therefore contributes to the wider Invasive Non-Native Species Framework Strategy for GB.

The Species Action Framework explains that, as it is costly and very difficult to control or eradicate invasive non-native species once they are established, efforts should focus on preventing the arrival and establishment of those non-native species likely to become damaging. However, as it is not possible to predict with certainty the species that will arrive and establish themselves in Scotland, the Species Action Framework does not specify potential future invasive non-native species. Instead SNH will work with the Scottish Working Group on Invasive Non-Native Species (and through the GB Programme Board) on preventative action. The GB Strategy on non-native species will help to provide a clear sense of direction and a framework within which future priorities can be agreed.

“The Environment Strategy for Wales”

The Environment Strategy for Wales recognises the importance of the environment and explains how the challenges facing it will be tackled over the next 20 years.

http://new.wales.gov.uk/topics/environmentcountryside/epq/Environment_strategy_for_wales/About_the_strategy/?lang=en

Annex 6 – List of Abbreviations

CBD	Convention on Biological Diversity
EPPO	European and Mediterranean Plant Protection Organisation
GISP	Global Invasive Species Programme
GMO	Genetically Modified Organism
IAS	Invasive Alien Species
IMO	International Maritime Organisation
INNS	Invasive Non-Native Species
IPPC	International Plant Protection Convention
ISAP	Invasive Species Action Plan
IUCN ISSG	World Conservation Union's Invasive Species Specialist Group
NERC	Natural Environment and Rural Communities [Act 2006]
NNRAP	Non Natives Risk Analysis Panel
NNS	Non-Native Species
OIE	World Organisation for Animal Health
OSPAR [Convention]	Convention for the Protection of the Marine Environment of the North-East Atlantic
PAP	Pathway Action Plan
SSB	Stakeholder Sounding Board
UK BAP	UK Biodiversity Action Plan
UK BRAG	UK Biodiversity Research Advisory Group
WFD	Water Framework Directive
WTO	World Trade Organisation

Annex 7 – References

- i CBD Invasive Alien Species Introduction: <http://www.biodiv.org/programmes/cross-cutting/alien/default.aspx>
- ii Millennium Ecosystem Assessment reports at: <http://www.maweb.org/documents/document.354.aspx.pdf>
- iii 2003 Review of non-native species policy report at: <http://www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native/report.pdf>
Annexes at: <http://www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native/annexes.pdf>
- iv Convention on the Conservation of European Wildlife and Natural Habitats (Bern) – European Strategy on Invasive Alien Species: http://www.jncc.gov.uk/pdf/BRAG_NNS_Genovesi&Shine-EuropeanStrategyonInvasiveAlienSpecies.pdf
- v Annexes to the Communication from the Commission – Halting the Loss of Biodiversity by 2010 – and Beyond: http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/sec_2006_621.pdf
- vi Communication from the Commission – Halting the Loss of Biodiversity by 2010 – and Beyond: http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0216en01.pdf
- vii Non-native species: refers to a species, subspecies or lower taxon, introduced (i.e. by human action) outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce.
- viii Invasive alien species are species introduced deliberately or unintentionally outside their natural habitats where they have the ability to establish themselves, invade, outcompete natives and take over the new environments.
See: <http://www.biodiv.org/programmes/cross-cutting/alien/default.aspx>
- ix Convention on Biological Diversity Decision VI/23: <http://www.biodiv.org/decisions/default.aspx?m=COP-06&id=7197&lg=0>
- x Lack of scientific certainty about the various implications of an invasion should not be used as a reason for postponing or failing to take appropriate eradication, containment and control measures. See Guiding Principle 1 at: <http://www.biodiv.org/decisions/default.aspx?m=COP-06&id=7197&lg=0>
- xi EU Wildlife Trade Regulation: <http://www.unep-wcmc.org/species/trade/eu/>
- xii The 2003 policy review report identified a number of introduction pathways at annex 5: <http://www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native/annexes.pdf>
- xiii Review of non-native species legislation and guidance: <http://www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native/ecoscope.pdf>
- xiv Delivering Alien Invasive Inventories for Europe. <http://www.daisie.se/>
- xv ALARM is an EU 6th Framework project run by the Leipzig Halle University under which a number of research projects have been conducted. <http://www.alarmproject.net/alarm/>
- xvi BRAG strategy for non-native species research: <http://www.ukbap.org.uk/library/brag/NonNativeSpeciesResearchStrategy.pdf>
- xvii Bern convention; <http://conventions.coe.int/Treaty/EN/Treaties/Html/104.htm>
- xviii Convention on Biological Diversity Article 8: <http://www.biodiv.org/convention/articles.shtml?a=cbd-08>
- xix <http://www.cbd.int/decisions/default.shtml?m=COP-05&id=7150&lg=0>
- xx <http://www.cbd.int/decisions/cop-06.shtml?m=COP-06&id=7197&lg=0>
- xxi <http://www.cbd.int/decisions/cop-07.shtml?m=COP-07&id=7750&lg=0>
- xxii <http://www.cbd.int/decisions/cop-08.shtml?m=COP-08&id=11041&lg=0>
- xxiii Ramsar Convention on Wetlands of International Importance http://www.ramsar.org/key_sitelist.htm
- xxiv http://www.ramsar.org/res/key_res_vii.14e.htm
- xxv Council Directive 79/409/EEC on the conservation of wild birds (EU Birds Directive) http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm
- xxvi Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EU Habitats Directive): http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm
- xxvii Presidency Conclusions, Gothenburg European Council, June 2001.

