

NIEA Position statement on Invasive Alien Species



Cover Images:

Floating Pennywort (*Hydrocotyle ranunculoides*) by John Early

Himalayan Balsam (*Impatiens glandulifera*) by John Early

New Zealand Pigmyweed (*Crassula helmsii*) by John Early

NIEA Position Statement on Invasive Alien Species

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1. Introduction

1.1 Document Context and aim

This document was produced in August 2010 and sets out how the Northern Ireland Environment Agency (NIEA) has been addressing Invasive Alien Species (IAS) issues through our work practices and explains our future commitment. It outlines the principal UK and European legislation and conventions whose requirements direct our policy and actions. The document also explains the principles behind our approach to IAS and identifies the main actions we have taken to date. Our aim is to reduce the impact of Invasive Alien Species on our native biodiversity.

Our aim:

To reduce the impact of Invasive Alien Species on native biodiversity.

1.2 What are Invasive Alien Species?

Non-native (exotic / alien) plants or animals are species that have been introduced, either intentionally or unintentionally, outside their natural range. Many of these non-native species live in harmony with our native species causing no adverse impacts. For example, most of our agricultural and garden plants are non-native and live in harmony within our natural habitats with our native species. A few non-native species however can become what is known as 'invasive' as they thrive in our habitats and out-compete our native flora and fauna (please refer to Annex 1 for full definitions). Consequently, those that are invasive can be very problematic to our native wildlife causing a range of harmful impacts.

1.3 The need to address Invasive Alien Species

Invasive Alien Species not only pose a serious threat to biodiversity but can also have significant associated economic and social impacts. In addition to the practical need to respond to these impacts directly, there are also a number of policy drivers which require us to take action in a range of ways which are discussed later in this statement.

1.4 The threats to biodiversity

The Convention on Biological Diversity (CBD) 1993 cites Invasive Alien Species (IAS) as the second biggest threat to biodiversity worldwide, second only to that of habitat destruction. The Convention outlines a series of guiding principles on IAS for signatories to follow. These guiding principles are set out in Annex 3. Both the UK and Irish Governments are signatories to the CBD, as such we have followed the guidance of these principles through the work practices outlined in this position statement.

IAS are known to have a wide range of impacts, both direct and indirect. They are known to impact in a variety of ways including:

- Hybridisation
- Competition for habitat space and food
- Increased erosion
- Sedimentation
- Recreational impacts
- Predation
- Parasites, diseases and pathogens
- Health and Safety implications
- Economic damage

1.5 Invasive Alien Species in relation to Northern Ireland

In Northern Ireland some Invasive Alien Species such as Rhododendron (*Rhododendron ponticum*) and Japanese knotweed (*Fallopia japonica*) have been documented as having negative impacts for some time. In an attempt to address this people have been taking local action on an ad hoc basis. Other species have arrived more recently, such as Zebra Mussels (*Dreissena polymorpha*). The process is still ongoing with the detection of the Harlequin ladybird (*Harmonia axyridis*) at a shop in Lisburn on 6th November 2007 and the recent arrival of the Muntjac Deer (*Muntiacus reevesi*), first confirmed, in Co. Down in June 2009.

There is a long list of potential invaders at the time of writing, which have not yet arrived in Northern Ireland but could do so in the near future. Species such as Signal Crayfish (*Pacifastacus leniusculus*) have spread to Scotland and could potentially reach Northern Ireland. It is important measures are put in place to prevent the introduction of these high risk species where it is possible to do so.

Some species when they arrive, such as Zebra Mussels, can totally alter the way the habitat they are in functions. These are sometimes termed 'ecological engineers' and can have impacts beyond that on biodiversity. For example, Zebra Mussels have impacted on recreational boating by encouraging excessive aquatic plant growth and have also impacted upon the operation of water abstraction plants. These 'ecosystem services' impacts can have significant economic as well as social costs.

Quite often these species, such as Zebra Mussels, are very difficult or impossible to control or eradicate, it is therefore important to put measures in place and provide education to key stakeholders to prevent further spread of these species. For other species, such as Invasive Aquatic Plants, where eradication may be possible early detection and rapid response can significantly save on the costs associated with long term control, compared to when the species becomes better established or more widespread.

Some new invaders may arrive regardless of what we do, such as marine or bird species spreading naturally, some with the assistance of climate change creating more suitable habitats which would not have previously been suitable. Most invaders however arrive due to human's activities. This usually happens unintentionally although some introductions are known to have been deliberate, as the species was perceived as having a value. Typical 'vector pathways' include the horticultural trade, pet shops, recreational water users (including fishermen and boat users), aquaculture and ships ballast water. Others though, such as mammals, insects, pathogens / diseases and certain plant species, can be prevented from arriving or establishing if we take appropriate action. It should, for example, be possible to prevent the establishment of a new high risk species by taking appropriate action.

2. Policy Drivers

Numerous international instruments, binding and non-binding, have been developed to deal with certain aspects of the problem of Invasive Alien Species (IAS). The most comprehensive is the 1993 Convention on Biological Diversity (CBD) to which the UK Government and European Union Members are signatories. The CBD calls on all parties to “prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats, or species” (Article 8h). Amongst other things the CBD has supported the development of a Global Strategy on Invasive Alien Species.

At a European level the European Commission (EC) is currently (2010) drafting an European Strategy to specifically deal with the issue of IAS, it is anticipated this European IAS Strategy will be published in 2011. In light of this impending European Strategy the Department of the Environment (NI) is currently developing an Invasive Alien Species Strategy for Northern Ireland to which we will contribute and feed into.

The EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) and the EC Birds Directive (Directive 2009/147/EC on the conservation of wild birds), the main aims of which are to promote the maintenance of biodiversity, requires Government to designate and protect sites for both their habitats and species of community importance as either Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). These are collectively known as ‘Natura 2000 sites’. At a national level this has been transposed into the Conservation (Natural Habitats, &c.) Regulations (Northern Ireland) 1995 (as amended).

Some of the species and habitats listed in the EC Habitats Directive and EC Birds Directive are directly threatened by IAS both within Natura 2000 sites and in the wider countryside. Where an IAS is shown to be having a significantly negative impact upon the site selection features we are required to put measures in place to restore the habitat to favourable conservation status, where it is possible to do so.

The EC Water Framework Directive (WFD) (Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy) Article 11 requires that member states take specific measures to tackle the pressures on biodiversity and water. This EC Directive was transposed into national legislation as ‘The Water Environment (WFD) Regulations (Northern Ireland) 2003’. IAS have been identified at a UK level as being an anthropogenic pressure which requires action to address through the WFD Programme of Measures (POMs).

At a national level there is a requirement under ‘The Environment Order (Northern Ireland) 2002’ to protect habitats and species through designating Areas of Special Scientific Interest (ASSIs). If these habitats or species are shown to be under threat from Invasive Alien Species, Government are required to address the problem, where it is possible to do so. For example, the Common Cord Grass (*Spartina anglica*) has been shown to be having a negative impact on our Coastal Salt Marshes. As such NIEA has been committed to researching and carrying out control measures for a considerable time.

Both the UK Biodiversity Action Plan (UKBAP) and the Northern Ireland Biodiversity Strategy (NIBS) require action to be taken on Invasive Alien Species.

The Wildlife Order (NI) 1985 (currently under review as the Wildlife and Natural Environment Act (NI) 2010) Article 15 and Schedule 9 lists are one of several pieces of legislation that regulate the introduction of IAS. The Wildlife Order (NI) 1985 Article 15 makes it an offence to intentionally introduce any animal species or any species listed on Schedule 9.



Image by John Early

Floating Pennywort (*Hydrocotyle ranunculoides*)

3. The NIEA approach to Invasive Species Management: Past, Present and Future

So far in this position statement we have outlined the various threats Invasive Alien Species (IAS) pose and the various policy drivers which require action to be taken. This section outlines the approach NIEA has taken to date in following the Convention on Biological Diversity (CBD) Guiding Principles (detailed in Annex 3) and our future commitments to addressing IAS.

3.1 Our approach to date

We have been taking action on IAS for a considerable time, on an ad-hoc basis. Since the establishment of the Invasive Species in Ireland Project in 2006, as outlined in Section 3.2, we have been and will continue to address IAS issues on a strategic footing in partnership with the National Parks and Wildlife Service (NPWS), Dublin.

In doing so we have followed the guiding principles of the Convention on Biological Diversity (CBD) through the range of activities we have undertaken. We also work closely with the GB Non-Native Species Programme Board to ensure Northern Ireland works in line with the approach taken in GB.

3.2 The Invasive Species in Ireland Project

3.2 (i) Project background

In May 2006, in partnership with NPWS we jointly initiated and funded the 'Invasive Species in Ireland Project' to begin to implement the recommendations of the Invasive Species in Ireland Report produced in March 2004. The Project is overseen by a Project Steering Group jointly chaired by NIEA and NPWS with expert advice from a range of Technical Working Groups detailed in section 3.6 (i).

3.2 (ii) Invasive Species in Ireland Project (ISI) brand

A distinctive Invasive Species in Ireland logo has been developed for the use by Invasive Species in Ireland (ISI) stakeholders.



3.2 (iii) The Invasive Species in Ireland website

In partnership with NPWS, we have funded the creation of a new website dedicated to IAS. The website www.invasivespeciesireland.com includes educational materials in the downloads section, a reporting facility through the 'Alien Watch' facility, information on both high risk established and high risk potential species, information on upcoming events and many other useful sections. As new project outputs and information becomes available we aim to maintain and further develop the ISI website.

3.2 (iv) Invasive Species in Ireland Forum

Each year we run an 'Invasive Species in Ireland Forum' in partnership with NPWS. The Forum brings together IAS practitioners from across both Northern Ireland and Republic of Ireland; and sometimes further afield. The Forum involves stakeholders from Government, academia, business sectors, private interest and Non-Government Organisations (NGOs). It is hosted annually with the venue alternating between Northern Ireland and the Republic of Ireland.

3.2 (v) Guidance and educational materials

We have produced a range of guidance materials for IAS through the ISI Project to enable effective control and eradication of a range of established IAS. For example, Best Practice Management Strategies have been developed for established species such as Japanese knotweed, a field guide for a selection of known established species has been produced and downloadable pre-written presentations for stakeholder use have also been produced. All of these materials are available for public download on the ISI website. As new information becomes available we will aim to update and produce further educational materials and Management Strategies.

To support our work at events and with other stakeholders we have produced a range of promotional materials branded with the ISI logo.

3.2 (vi) Exclusion Strategies and Contingency Plans

Given that there is a risk of some high impact IAS arriving here, which were identified through the risk assessment process detailed late in section 3.3, we have developed Exclusion Strategies and Contingency Plans for a range of high risk species, such as non-native crayfish species. These plans identify best practice management options for the highest risk IAS in the event one of these species did arrive. Identifying best practice management options should enable rapid response to be undertaken, where possible to do so.

3.2 (vii) Codes of Good Practice (COPs)

Through the ISI Project we have developed Codes of Good Practice for several key sectors including the horticulture industry, recreational water users and marina managers to date. We have also developed a draft Code of Good Practice for the aquaculture industry. In future we aim to produce additional Codes of Good Practice in partnership with key stakeholders and to encourage their uptake and the uptake of existing Codes of Good Practice.

3.2 (viii) Specialist training and funding

We will continue to facilitate training and provide advice on IAS identification, management and control to a wide range of stakeholders from local councils to NGOs.

Subject to funding availability, at certain times of the year, we provide grant aid support, through our competitive Natural Heritage Grant Aid Programme, to enable others to take action on high risk IAS.

3.3 Prioritising species – The Risk Assessment Process

Given the numbers of existing and potential IAS and the variety of impacts they may have, we have developed a prioritisation system to help focus management where it is most needed and can be most effective.

To enable this we commissioned the project team delivering the Invasive Species in Ireland Project to develop and implement a methodology that enabled the prioritisation of management actions for IAS that:

- are already established
- are likely to invade in the future, impacting on our native biodiversity

Given the huge number of species that could potentially become established in Northern Ireland the risk assessment process methodology had to function in a rapid and robust way and identify a sub-set of species for further assessment and prioritisation. The risk assessment system developed took a score card approach and incorporated relevant questions from the Defra (UK Department for Environment, Food and Rural Affairs) framework.

The risk assessment itself was based on questions relating to invasion history, vectors and pathways, suitability of habitats, propagule pressure, establishment success, spread potential, ecological impacts, effect on EU legislative obligations, economic impacts and feasibility of control / eradication.

Separate assessments were carried out for potential and established IAS. Whilst the potential and established species risk assessments are similar they evaluated the risk from different stages of the invasion process.

Since the creation of the methodology we have carried out risk assessments on hundreds of established and potential species. Further details on the risk assessment process and the results of the assessments are posted on the Invasive Species in Ireland (ISI) website at www.invasivespeciesireland.com

In taking forward the risk assessment process NIEA will:

- Further refine the risk assessment methodology if necessary.
- Include additional species as appropriate in the process.
- Re-run the risk assessment process in view of new information on any species.
- Develop a more rigorous method to apply to especially high risk species that may require special action in future, such as a ban for sale.
- Develop a risk assessment methodology for pathways (vectors).

3.4 Northern Ireland Environment Agency managed properties

We have a long history of carrying out control and eradication measures for IAS on the properties we manage. For example, species such as *Rhododendron ponticum* has been controlled at Peatlands Park, Dungannon, for many years. We will continue our commitment to carry out control and / or eradication measures, where possible to do so, on any IAS which are known to be causing an adverse impact on the properties we manage. We will also continue to develop and share our experience managing IAS and promote demonstration sites for best practice control techniques.

3.5 Evidence base – Research

A key part of ensuring our decisions regarding IAS are fully informed is through ensuring an extensive and up-to-date evidence base is acquired. This is achieved in a variety of ways including undertaking research, carrying out species risk assessments, sharing knowledge with others in GB, Republic of Ireland and further afield; and via the knowledge gained through the range of practical control and eradication measures we have undertaken on the properties we manage. Together these collectively ensure management decisions are based on sound scientific principles and facts. As such we are committed to undertaking research on IAS to ensure management decisions are based on sound scientific principles and facts.

Much of our research is carried out through the Natural Heritage Research Partnership (NHRP), a collaborative venture between NIEA and Quercus at the School of Biological Sciences at the Queens University of Belfast (QUB). A key research theme of the partnership includes IAS. Through this partnership projects related to IAS to date have included:

- 1) The Common Cord Grass *Spartina anglica* distribution and GIS mapping.
- 2) An Invasive Aquatic Plant Species PhD.
- 3) The impact of the New Freshwater invader: the Bloody-red Shrimp *Hemimysis anomala*.
- 4) Muntjac knowledge transfer: Ecology of introduced Muntjac deer and appraisal of control procedures.
- 5) Verification of hybridisation between introduced European and native Irish Hares.
- 6) Veracity of anecdotal Muntjac deer sightings.
- 7) Aging slipper limpet (*Crepidula fornicata*) shells from Belfast Lough.

Further details of past projects and new projects can be found on the Quercus website at <http://www.qub.ac.uk/sites/Quercus/Projects/> . Information on other projects ongoing in the UK and Ireland are also available on the ISI website and the Non-native Species Secretariat website (<http://www.nonnativespecies.org/>)

3.6 Strategic Co-ordination and Partnership Approaches to Invasive Alien Species

3.6 (i) Strategic Co-ordination groups.

We will continue to promote the Invasive Species in Ireland Project through a contract let in partnership with NPWS, on an All-Ireland basis, for a further 3 years from December 2009 to December 2012. We work closely with NPWS and other Government Departments, both North and South, on the Steering Group for the Project.

To aid the delivery of actions with a broad range of stakeholders five technical working groups have been established under the ISI project umbrella dealing with:

- Freshwater
- Terrestrial
- Marine
- Education and awareness
- Policy and legislation

At a UK level we will continue to engage with the GB Non-Native Species Programme Board, UK Technical Advisory Group (TAG) WFD Alien Species Group and other groups as necessary.

In updating existing and developing new Codes of Good Practice, Management Strategies, Exclusion Strategies, Contingency Plans and other materials a wide range of stakeholders will continue to be involved in the process.

3.6 (ii) Species Control Groups

We have over several years been setting up IAS groups for new and emerging species issues. The aim of these groups is to act as a focal point for information, the prevention of further spread of the IAS on which the group is focused, to agree species priorities and to co-ordinate or provide advice on best practice control / eradication measures where they are possible and a priority.

Groups have been set up for specific species such as the Zebra Mussel (*Dreissena polymorpha*), Common Cord grass (*Spartina anglica*) and the European brown hare (*Lepus europaeus*). Other groups such as the Northern Ireland Squirrel Forum cover species such as the Grey Squirrel (*Sciurus carolinensis*) through their remit. Each of the groups consists of representatives from Government organisations, NGOs, academia and private interest.



Giant Hogweed seed head (*Heracleum mantegazzianum*)

4. Summary

In this position paper we have outlined the actions we have been undertaking and our future commitment to addressing IAS. We will review this document in three years time in light of the development of an Invasive Species Strategy for Northern Ireland. The key actions set out in this document are summarised as follows:

1. Continue to follow the guiding principles of The Convention on Biological Diversity.
2. Continue to implement the agreed recommendations of Invasive Species in Ireland Report.
3. Maintain the partnership to addressing IAS with our counterparts in the National Parks and Wildlife Service.
4. Maintain linkages with the GB Non-Native Species Programme Board.
5. Contribute towards the development and implementation of an Invasive Alien Species Strategy for Northern Ireland.
6. Further develop the risk assessment process.
7. Run risk assessments for established and potential IAS.
8. Develop a more rigorous risk assessment methodology to apply to specific high risk species that may require specific action in future, such as ban for sale.
9. Develop a risk assessment methodology for pathways (vectors).
10. Maintain and further develop the Invasive Species in Ireland website.
11. Through the Invasive Species in Ireland Project continue to run the Invasive Species in Ireland Forum in partnership with NPWS.
12. Continue to increase awareness of IAS.
13. Update and develop new management plans.
14. Update and develop new contingency plans.
15. Continue to promote and develop new Codes of Good Practice for key sectors.
16. Update and develop new educational materials specifically for IAS.
17. Promote the Invasive Species in Ireland Project and website at relevant key events
18. Provide advice on IAS to other agencies / organisations developing management programmes or policies.
19. Provide advice on regional and local IAS management initiatives.
20. Provide grant aid support (subject to funding availability) to enable others to undertake sustainable eradication / control of high risk IAS.
21. Control IAS where they are adversely affecting NIEA managed properties.
22. Create best practice demonstration sites for the control of select IAS.
23. Provide training and advice on best practice control and eradication methods.
24. Undertake research to ensure management decisions for IAS have a strong evidence base.
25. Gather information and case studies on the socio-economic impact of IAS.
26. Maintain NIEA representation on the relevant Technical Working Groups developed as part of the ISI Project.
27. Maintain NIEA representation on other relevant Invasive Alien Species Groups and establish others as necessary.
28. Work with other organisations to develop rapid response and early warning systems for high risk IAS.
29. Further develop monitoring and surveillance programmes for IAS in partnership with other organisations.
30. Provide a facility for the reporting of IAS through the ISI website.
31. Share IAS records gathered during monitoring with CEDaR and the NBDRC to ensure it is made publically available.
32. Develop Biodiversity Indicators for IAS.

Annex 1 – IAS Definitions (Derived from CBD and European Strategy on Invasive Alien Species principles)

'Invasive Alien Species' means an alien species whose introduction and/or spread threatens biological diversity.

'Alien species' refers to a species, subspecies or lower taxon, introduced outside its natural, past or present, distribution; including any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce (some international / regional / national instruments use the terms 'exotic species', 'non-indigenous species' or 'non-native species' when referring to 'alien species').

'Introduction' refers to the movement by human agency, indirect or direct, of an alien species outside its natural range (past or present). This movement can be either within a country or between countries or areas beyond national jurisdiction (this can be extended to include the movement of species to off shore Islands where they are not usually resident).

'Intentional introduction' refers to the deliberate movement and /or release by humans of an alien species outside its natural range.

'Unintentional introduction' refers to all other introductions of alien species which are not intentional.

'Establishment' refers to the process whereby an alien species in a new habitat successfully produces viable offspring or reproduces by vegetative means, with the likelihood of continued survival.

Annex 2 – Statement abbreviations and definitions

ASSI – Area of Special Scientific Interest

Biodiversity – The CBD defines biodiversity as the term given to the variety of life on Earth and the natural patterns it forms. It also includes genetic differences within each species - for example, between varieties of crops and breeds of livestock. Yet another aspect of biodiversity is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them.

CBD – Convention on Biological Diversity 1993.

Ecosystem – a system of interdependent living organisms (including humans) which share the same habitat, functioning together with all of the physical factors of their environment.

Ecosystem services – Humankind benefits from a multitude of resources and processes that are supplied by natural ecosystems. Collectively, these benefits are known as ecosystem services and includes products like drinking water and processes such as decomposition of wastes.

NGO – Non-Government Organisation.

NIEA – Northern Ireland Environment Agency.

NPWS – National Parks and Wildlife Service.

SAC – Special Area of Conservation.

SPA - Special Protection Areas.

WFD – EC Water Framework Directive

CEDaR – Centre for Environmental Data and Recording

NBDRC – National Biodiversity Data Recording Centre.

Annex 3: The Convention on Biological Diversity Guiding Principles for managing IAS

The Convention on Biological Diversity (CBD) is an internationally binding treaty that was adopted in Rio de Janeiro in June 1992. One of the key goals of the Convention is the conservation of biological diversity. The Convention was open for signature at the Earth Summit in Rio de Janeiro on 5th June 1992 and entered into force on 29th December 1993.

The Convention text Article 8 (h) reads that each contracting party shall, as far as possible and as appropriate prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.

The guiding principles set out for implementing the Convention on Biological Diversity Article 8 (h) include:

1. Precautionary approach
2. Three stage hierarchical approach (prevention, early eradication, long term control).
3. Ecosystem approach.
4. Role of member states.
5. Research and monitoring.
6. Education and public awareness.
7. Border control and quarantine measures.
8. Exchange of information.
9. Co-operation, including capacity building.
10. Intentional introductions.
11. Unintentional introductions.
12. Mitigation of impacts.
13. Eradication.
14. Containment.
15. Control.

Further information on the guiding principles can be found at:
www.cbd.int/decision/cop/?id=7150



Our aim is to protect, conserve and promote the natural environment and built heritage for the benefit of present and future generations.

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