

London Invasive Species Plan

Summary

LISI brings together organisations from a range of sectors to deliver practical action to prevent, control and, where feasible, eradicate invasive non-native species in London.

Through this action plan, LISI aims to provide a co-ordinated approach to address invasive non-native species. It aims to collate best practice management principles to provide a coherent direction for all land managers to work together to manage invasive non-native species within the Greater London area.

This action plan is suitable for anyone addressing invasive non-native species within the Greater London area. Although LISI will continue work towards completing these actions, the majority of them are ongoing and will rely heavily on partnerships between many different stakeholders to ensure success.

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1. Introduction

Invasive non-native species (INNS) are thought to be one of the largest threats to biodiversity globally after habitat loss and destruction (Defra, 2008). Due to this, there is a need to work together to manage INNS on a Great Britain and London-wide scale to ensure works result in increased benefits and cost savings.

In 2011, LISI was successful in receiving a grant to employ a full-time LISI Manager to start in early 2012.

Through this action plan, LISI aims to provide a co-ordinated approach to address INNS. The action plan aims to: 1) collate current best practice INNS management principles and knowledge of experts to provide the most accurate management options available, and 2) to provide a coherent direction and a co-ordinated approach for all land managers to work together to manage INNS within the Greater London area. This is aided by highlighting specific species that may require management (see section 6).

Broadly, the structure from [*The Invasive Non-Native Species Framework Strategy for Great Britain*](#) produced by Defra and the Scottish and Welsh Governments has been incorporated into this action plan. This has the aim of providing a holistic and consistent method for INNS action planning. A review of The Invasive Non-Native Species Framework Strategy for Great Britain started in 2013 with a review for the London Invasive Species Plan initially set for a two year period to reflect any progress in action and incorporate any changes to emerging best practice information and the latest science.

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2. Why address Invasive Non-Native Species?

As information and the rationale for managing invasive non-native species are well documented both nationally and globally (in a range of primary literature and government reports), only a brief synopsis has been provided within this plan.

Initially, the term invasive non-native species needs to be defined. To provide continuity between the relevant key stakeholders the following definitions have been adapted from both the Defra and the Great Britain Non-Native Species Secretariat (GBNNSS) definitions. Although these definitions have been made with a Great Britain remit in mind, they are considered appropriate for the Greater London area and indeed for this plan.

Non-native species are virtually any species (terrestrial, freshwater and/or marine) that did not naturally occur within the United Kingdom before people first arrived. An **invasive non-native species** has been defined as any non-native species that causes, or is thought may cause, serious negative impact on our native species, our health or our economy. It is important to make the definition between **non-native** and **invasive** as

there are many non-native species that are not invasive and do not pose a threat. Similarly, it is important to note that a native species to one country, such as Great Britain, can become invasive if introduced to an area outside its natural range.

Over time, plants, animals, fungi and microorganisms have become increasingly mobile throughout the world. This has brought species into ecosystems that have developed without them and, under some circumstances, the conditions that limit their growth in their natural system (such as nutrients, moisture, pests and diseases) are not present in the new systems to which they have been introduced. This allows a unique subset of species a chance to grow and reproduce unchecked. The invaded ecosystem is unable to cope with this newly arrived species and this is when INNS become a major issue and management is needed. Importantly, invasive species can also be a threat to human health, agriculture and industry. Furthermore, many INNS can out-compete and significantly reduce crop yields through either direct competition or predation.

Species not covered by this plan:

It is important to note that this plan solely focuses on 'invasive' non-native species, as there is a very important distinction between 'invasives' and simply non-natives. Similarly, this plan does not cover natives that behave in an invasive manner as their management is a specific issue for individual sites rather than as part of a London wide management or eradication programme.

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3. Unique Greater London

The Greater London area differs in many ways to the rest of the United Kingdom most noticeably in regards to climate, habitat and overall land use. These factors help define the range, density and behaviour of INNS found within the Greater London area. As this differs to the rest of the UK it can lead to species behaving uniquely in London compared to other areas of the UK. A brief summary has been included below to highlight these main differences.

Climate

Due to London's general location (longitude and latitude) it has a higher average temperature compared to other areas of the UK. This is compounded by a phenomenon called the 'urban heat-island effect', which is where heat created from items such as air conditioners, cars etc. is stored in building materials and redistributed into the environment. This only occurs in highly urbanised areas and makes the average temperature within London higher than it would normally be.

This is important as climate defines many aspects of species behaviour and therefore directly affects their ability to persist in a new location. This is particularly important as

low temperatures tend to be a limiting factor for invasive species within the UK. As London has a higher average temperature, we can use the heat-island effect to predict possible trends of INNS establishment across the rest of Great Britain, due to rising temperatures from climate change. It is thought that it can specifically be used to flag new potential invasive non-native species; and to help model the future distribution, density and behaviour of current invasive non-native species, predicting how they might behave as a result of climate change.

Urbanisation

London is an extremely urbanised area and is a major international port for both people and goods. It has a long history of occupation and is now linked to the world as a focal point of international travel and trade. Thousands of visitors enter the UK every day through numerous international ports which also bring various cargos into the UK. As these activities facilitate the movement of new species, it causes urban areas to act as hot spots for invasions by new INNS. New species can be introduced in a range of ways, through simple pathways such as tourism (e.g. in bags, on the bottom of shoes or in food) or through more complicated pathways via industry (e.g. on the hulls of ships, in ballast water and a range of ways hidden in the cargo). Many species have been and still are brought in through the horticultural trade and can lie dormant in the urban environment before exploiting a niche and becoming a potential invasive species. This knowledge enables us to target monitoring in places where these species are likely to appear.

People

The people that live, work and travel in and through the city are also in a unique position and need to be considered. They define how invasive non-native species are perceived and how action is to be communicated, carried out and portrayed within the urban area.

London is a cultural centre and has a highly cosmopolitan population. With this comes a range of ideas, thoughts and relationships with and about nature. These circumstances mean that peoples' connection to the environment is likely to be different to those of us that manage and work within the environmental sector.

Although this does not seem immediately relevant, it is important for us to consider peoples' perceptions of invasive non-native species and the wider environment. This is especially true as there is a need for us as NGOs, not for profit organisations, charities and the government to communicate with them as people are key in communicating demands on government priorities and therefore influencing on ground action.

Proximity to existing populations

There are a range of species currently in Europe that have been flagged as potential INNS for the UK. Unfortunately, much of the movement between Europe and the UK goes through London and this movement is a major pathway for the potential spread of new INNS into the Greater London area. Additionally, in recent reports, the Thames estuary has been highlighted as suitable habitat for many of these fauna species particularly those from the Ponto-Caspian region (home to the invasive shrimp *Dikerogammarus villosus*) which are thought to be of the highest concern.

Furthermore, highly disturbed urbanised areas do not usually provide the ideal conditions for locally native species. This means that there is a reduction in their capability to effectively compete with introduced non-native species, which potentially enables the latter to become established and thereafter invasive. These factors combine to provide a unique set of conditions in which there are both means for invasive non-native species to enter the UK and a range of habitat conditions able to sustain new species and populations. Therefore due to these factors there is a need for London to be at the forefront of invasive species management so that any new INNS incursions can be prevented or managed quickly and efficiently.

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4. London Invasive Species Initiative (LISI) Aims and Objectives

The London Invasive Species Initiative (LISI) brings together organisations from a range of sectors to deliver practical action to prevent, control and, where feasible, eradicate INNS in London. The initiative works to coordinate action in line with [The Invasive Non-Native Species Framework Strategy for Great Britain](#), whilst also delivering benefits under the [Water Framework Directive](#) and national biodiversity objectives, including the [London Biodiversity Action Plan](#).

Generally LISI encourages better co-ordination and partnership working to prevent, reduce and eliminate the impacts caused by INNS across the city.

Aims/Scope

Specifically LISI aims to:

1. Facilitate and provide direction for a streamlined approach towards INNS prevention, control and management.
2. Provide accurate and current information on INNS prevention, control and management.
3. Promote the importance of INNS prevention, control and management.

Objectives/Purpose

1. LISI's objectives have been considered in line with the above aims and represent the deliverable outcomes that LISI wishes to provide.
2. Develop and maintain an action plan to address the species of most urgent concern.
3. Facilitate control and eradication projects for high priority species.
4. Provide a link between research and practitioners, to help support the evidence base for invasive species impacts and/or control measures and investigate and promote best practice models.

5. Act as an early warning system for new and emerging invasive species and take early action to control the spread of or, if possible, eradicate these invasive non-native species.
6. Assist with promoting volunteer programmes and training volunteers.
7. Promote awareness of the risks and impacts associated with invasive species.
8. Work with GIGL to collate and monitor data on the distribution and spread of invasive species in London.

In addition to the broader aims and objectives above, LISI's objectives mirror the Convention for Biological Diversity's "guiding principles of prevention, detection/surveillance and control/eradication of invasive species" and cover the following points:

- Collating and monitoring data on the distribution and spread of invasive species in London.
- Developing action plans to address the species of most urgent concern.
- Facilitating control and eradication projects for high priority species.
- Providing a link between research and practitioners (to help support the evidence base for invasive species impacts and/or control measures).
- Act as an early warning system for new and emerging invasive species.
- Promoting awareness of the risks and impacts associated with invasive species.

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5. Methodology

To ensure consistency between existing UK INNS planning the London Invasive Species Plan broadly follows the outline of [The Invasive non-native Species Framework Strategy for Great Britain](#) completed by Defra. Below is a summary of the process by which these actions have been developed, with the dual purpose of ensuring transparency in the decision making process, allowing for repetition in subsequent years and enabling implementation by other organisations if the model is successful.

1. Broad outline created following The Invasive non-native Species Framework Strategy for Great Britain produced by Defra.
2. Initial development of actions within the LISI Steering committee. Reviewed by Non-Native Species Secretariat.
3. Actions further reviewed by the LISI steering group and LISI manager in line with current needs of the industry.
4. Draft Plan out for comment with specific feedback requested.
5. Amendments made and Action Plan adopted.
6. Schedule a review when required.
7. A list of all the participating stakeholders has been included to represent the level of stakeholder consultation completed as part of this plan.

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6. 'High Risk Pathways' and 'High Risk Species'

Identifying high risk pathways and high risk species is conducted on a national scale by a range of government and non-government organisations with the overall Risk Assessment process managed by the Great Britain Non-native Species Secretariat (GBNNSS).

This risk analysis generally includes three component parts: risk assessment, risk management and risk communication. This includes the assessment of the hazards posed by a species, the severity of those hazards and the likelihood that they will occur. In general, these elements are suitable for adoption within the Greater London environment, although there is a need to ensure outcomes are focused on prevention and management of these risks rather than the risk process itself.

In an attempt to capture local risk planning and to help with prioritisation LISI, has developed a species of concern list which categorises species within the Greater London area. The species of concern list places species into six categories (see table below). Quarterly reviews of the list are undertaken to record changes in knowledge and the environment.

Category	Description	Example *please note this may change
1	Species not currently present in London but present nearby or of concern because of the high risk of negative impacts should they arrive.	Invasive shrimp, <i>Dikerogammarus villosus</i>
2	Species of high impact or concern present at specific sites that require attention (control, management, eradication etc.).	Water primrose, <i>Ludwigia grandiflora</i>
3	Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate.	Floating Pennywort, <i>Hydrocotyle ranunculoides</i>
4	Species which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required.	Zebra Mussel, <i>Dreissena polymorpha</i>
5	Species for which insufficient data or evidence was available from those present to be able to priorities	Foxglove-tree , <i>Paulownia tomentosa</i>
6	Species that were not currently considered to pose a threat or have the potential to cause problems in London.	Giant Salvinia, <i>Salvinia molesta</i>

Table 1. Species of concern categories. The latest [Species of Concern list can be found here.](#)

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7. What does this plan mean for you?

Although LISI will continue to work towards completing these actions, the majority of them are ongoing and will rely heavily on partnerships between many different stakeholders to ensure success. Due to the reliance on outside factors and the ongoing changing needs of the INNS industry, these actions will need to be completed with consideration of current trends and as opportunities arise.

- Ideally this plan will be used to:
- Provide a direction for INNS planning
- Create a list of prioritised action of specific management categories (as represented by the species of concern categories).
- Provide a means to raise the profile of INNS within the Greater London area.
- Highlight the need to report high priority sites

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8. How to use this Action Plan and who can use it

This action plan is for the use of anyone involved or interested in the management of INNS within the Greater London area. It has been developed so that it can be used by a variety of stakeholders either as a standalone document and action plan or as a document that can assist in the direction and creation of unique and specific action plans where required. The action plan will provide actions, deliverables and suggest the ideal people or organisations able to complete or facilitate the works.

It is important to note that this action plan directly links actions to LISI species categories (as above) and not individual species. This allows the action plan to remain current while the species list is reviewed and updated in response to the changing environment, the development of our knowledge and the changing nature of this type of work.

The flow chart below illustrates a process to take when addressing INNS from the initial sighting of potential INNS through to the monitoring, which should be appropriate for most instances, see Figure 3. The aim of this flow chart is to promote best practice in regards to managing INNS individuals and populations. It is understood that land managers who deal with INNS regularly will already have a process so this is an option for those new to INNS management or those wishing to review their processes.

If you require any further information regarding this Action Plan, please email enquiries@GiGL.org.uk.

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9. How to use the Action Tables

A description of the information included in the action table has been provided in the table below. This aims to make the LISPs action tables more user-friendly so that there is a clear pathway between issue and solution. The action tables include:

Action number	To allow for easy referencing.
Category number	The LISI assigned category which indicates the species for which the action is relevant (see Category Table and LISI Species of Concern list).
Action	How to proceed.
Deliverables	What will be produced/how success is to be measured.
Persons Responsible	<p>Person responsible for completing/initiating the action. Stakeholder groups have been broken down to provide definition between different stakeholder groups, these include:</p> <ul style="list-style-type: none">• Awareness & public stakeholders (e.g. relevant media positions in LISI member organisations)• Policy & influencing stakeholders (e.g. Defra, volunteer organisations)• Academic & research stakeholders (e.g. researchers, University members)• Land management stakeholders (e.g. local boroughs, volunteer organisations) <p>These stakeholder groups are composed of representatives from interested organisations or people who have an interest in the respective areas of particular stakeholder groups. People or organisations can request they be put on the respective lists if interested in participating.</p>
Timeframe & Priority	<p>Timeframe of the project and priority compared to other actions (see keys below):</p> <p>Importance Key</p> <ul style="list-style-type: none">• High• Medium• Low <p>Timeframe:</p> <ul style="list-style-type: none">• Ongoing• Long term• Medium term• Short term

It is important to note that many of the actions fit under several of the action categories. This overlap has not been viewed as a shortcoming as it provides evidence of a holistic plan with minimal gaps within the proposed actions.

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10. Prevention

Prevention is the first level of protection against INNS and therefore should be considered in depth. Comprehensive, appropriate and effective prevention can result in significant financial savings to land managers which include government bodies, agricultural industries, biodiversity partners as well as the wider community. This also results in the safeguarding of our wildlife and natural environments, as effective prevention avoids INNS becoming a major regional or national issue.

Throughout this plan we have applied the Precautionary Principle, which refers to the management of scientific risk and is a key component of ecologically sustainable development (ESD) as noted in the United Nations Rio Declaration (1992). In the context of land management, it is utilised as a way of making environmental decisions with precaution and provides a more cautious decision making process. This has been adopted in the *Invasive Non-Native Species Framework Strategy* (section 7.6) and has been included in this action plan as a good guiding principle which will keep land management constant across all sectors.

The points below have been considered in the development of the action table (Table 1, prevention).

1. The identification of high risk pathways (i.e. identify previous points of INNS introduction).
2. Known robust risk frameworks.
3. Provisions set out through existing policies, documents and known best practice methods.
4. Known current effective methods in addressing these issues.
5. The identification of knowledge gaps in the current methods for effective prevention of INNS.
6. That integrated management and exchange of ideas between partner groups/forums will be required (where a range of prevention methods are best utilised to increase the chance of success).
7. That the need for prevention is ongoing.

This list will provide understanding and context for any changes that may be required to the action plan in the future.

Relevant category	Action	Deliverables	Persons responsible	Timeframes & priority
1	Identify high risk pathways and work to educate relevant stakeholders on how they can assist in the prevention of new introductions (linked to action 4.B). Where possible utilise existing Great Britain risk information.	Identified high risk pathways to allow for the direction of education.	GBNNSS LISI Steering Group/LISI Manager, Academic & research stakeholders	Ongoing

Relevant category	Action	Deliverables	Persons responsible	Timeframes & priority
N/A	Continue to update LISI Species of Concern so that species highlighted can be targeted for prevention actions (including a clear process as to how these species have been chosen).	Updated LISI Species list which is reviewed quarterly and reissued when appropriate.	LSI Steering Group/LSI Manager	Ongoing
1	Address actions arriving from species information sheets with reference to species listed as category 1 in the LISI Species List, which are the highest priority.	Actions delivered based on the Species Information Sheets.	LSI Steering Group/LSI Manager	Ongoing
ALL	Encourage and assist with opportunities for education for relevant stakeholders (e.g. workshops and brochures etc.). These include but are not limited to community groups, the general public, and industry and government agencies. These should cover relevant topics from the effect of INNS on biodiversity and industries to individual responsibilities in regards to implementation of relevant legislation (see action 5.B).	Completion of community education activities including but not limited to workshops and brochures which are to be adapted for use by specific key stakeholders for education.	LSI Steering Group/LSI Manager	Ongoing
1	Increase awareness of specific species not currently in London (see action 1.B), this is to be achieved through; Increasing access to information through the production of a LISI website. Identify, contact and foster relationships with relevant stakeholders (e.g. the Ports and Marine Groups). Utilise existing GBNNSS programmes with a similar focus.	LSI website free access to education material. Production of information cascading protocol to provide direction to relevant stakeholders. Representation of relevant stakeholder groups within LISI steering group.	LSI Steering Group/LSI Manager	Ongoing
1	Encourage the adoption of existing campaigns to prevent the spread of INNS. Including but not limited to; Be Plantwise, Horticultural Code of Practice and Check, Clean, Dry campaigns.	Create links to a range of appropriate stakeholder groups.	LSI Steering Group/LSI Manager Awareness & public stakeholders	Ongoing

Table 2. Prevention Action Table

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11. Early Detection, Surveillance, Monitoring and Rapid Response

Due to the wide range of species and pathways, as well as the range of different sectors required we can see that prevention is especially complicated. Due to this, it is unlikely that we will prevent all potential INNS from entering the UK and the Greater London area. Because of this, we need to consider appropriate actions for occasions when new INNS are located. Generally, these actions include *early detection, surveillance, monitoring and rapid response*, and link the aims of prevention to those of eradication and control in the following section.

Further information on these action categories is available in the [*Invasive Non-Native Species Framework Strategy*](#) and therefore only a summary has been included here. It is important to note that many of the actions below although focused on the Greater London area can be or have been adapted from Great Britain wide programs. Additionally, existing programs with the aim of early detection, surveillance, monitoring and rapid response have been included where possible.

The points below have been considered in the development of the action table (Table 2, Early Detection, Surveillance, Monitoring and Rapid Response). They are to consider:

1. Species specific pathways allowing new introductions.
2. If there are existing programs to monitor these pathways. If not, then;
3. Those who are best positioned to deliver monitoring of these pathways, specifically on a practical day to day basis.
4. Actions that will be required once there is a positive ID including who will need to be told and whether there is anyone who would be able to provide specialist species information on the INNS expected behaviour. This information will be crucial for ensuring effective rapid response.

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
ALL	Carry out monitoring programs for high risk species and pathways (see action 1.A) and maintain an overview. Support partnerships between existing groups working on monitoring high risk pathways. Work with GIGL to provide a central deposit for all INNS monitoring data. Encourage stakeholders to utilise these systems, as well as promoting general information sharing between all stakeholders where relevant. Keep informed of developments in nationwide INNS data collection and where possible work with GBNNSS in relation to requests.	Evidence of partnerships formed with relevant stakeholders, for both information and data. Monitoring program developed and used by relevant stakeholders.	LISI Steering Group/LISI Manager, GBNNSS, All stakeholder groups, GIGL	Ongoing

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
1	Develop a rapid response checklist to provide assistance to land managers in the event of a new incursion being recorded (i.e. who to contact in the first instance).	The production of a risk assessment checklist (short, dot-point and online) that will provide assistance in the event of a new incursion.	GBNNSS, LISI Steering Group/LISI Manager	Ongoing
ALL	Assist GBNNSS, where possible, with the development of any early detection, surveillance monitoring and rapid response programs or Invasive Species Action Plans that are within the scope of LISI's aims and objectives.	Response provided to any requests from GNNNS.	GBNNSS, LISI Manager	Respond when required

Table 3. Early Detection, Surveillance, Monitoring and Rapid Response Action Table

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12. Mitigation, Control and Eradication

The difference between rapid response actions and those of mitigation, control and eradication will vary for each INNS. It is generally seen as the point where work stops being a rapid co-ordinated response and becomes part of individual maintenance plans (although still widely coordinated). Ideally, these definitions should be included in individual rapid response plans. Broadly, this section refers to more long term management of the INNS which will be relevant for different species at different times. For up to date information please refer to the LISI Species of Concern list and associated management actions.

Ideally, the initial aim of INNS management is eradication although realistically there are limitations on the potential to effectively eradicate a species. This will generally depend on the existing density and distribution, available management options and funding and public/government pressure to address the INNS and proximity to means of spread. Any of these factors can significantly affect the ability of INNS to be controlled and therefore eradicated; importantly they form crucial steps to effective management of INNS.

Once it is determined that eradication is not possible, then mitigation and management of the species will be necessary. Mitigation is generally referred to as the treatment of

individuals or populations that may be causing particular damage to an area, ecosystem or specific species. Control generally refers to reducing the range and density of the species so that it is limited in its further spread to new areas and is generally referred to as a more long term approach compared to mitigation (generally control implies mitigation). In general, the definition attached to the INNS treatment is not crucial, it simply highlights where management is currently headed. It quickly defines whether treatment is aimed at eradication or simply managing the risks.

Unfortunately, mitigation and control options can be complex and need to be tailored to the specific species and ecosystem where they are located. Therefore this information will be covered in the GB Non-Native Species Secretariat website [Information Portal](#).

The points below have been considered in the development of the action table (Table 3, Mitigation, Control and Eradication):

1. Current knowledge on best practice management options for the particular INNS.
2. Relevant legislation and policy documents.
3. Previous mapping and risk planning as suggested in the previous sections of this document.
4. Relevant research completed.

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
2 & 3	Use high risk pathways mapping to identify high priority areas for targeted INNS management.	Identified high risk area priorities	LISI Steering Group/LISI Manager	Ongoing
2, 3 & 4	Develop species specific plans for the LISI species of concern as well as information series /sheets on the principles of dealing with INNS to encourage appropriate management.	Species specific action plans completed. Specific information sheets are developed and disseminated.	LISI Steering Group/LISI Manager, All stakeholder groups	Ongoing
2, 3 & 4	Develop partnerships to provide synergy and a coordinated approach to INNS mitigation, control and eradication between land managers and community groups.	Partnerships created that result in coordinated approach to INNS mitigation, control and eradication (i.e. a tangible outcome being the River Wandle INNS Plan).	LISI Steering Group/LISI Manager, All stakeholder groups	Ongoing

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
2, 3 & 4	Work with relevant stakeholders to control INNS on their land by providing direction and help in sourcing funding etc. targeting quick wins where possible.	Demonstrable reduction in population or the isolation of a population.	LISI Steering Group/LISI Manager, Awareness & public stakeholders and management stakeholders	Ongoing
2, 3 & 4	Work with current land managers and other interested stakeholders to implement and encourage best practice models for INNS of concern and priority.	Species specific best practice models created.	LISI Steering Group/LISI Manager Academic & research stakeholders and management stakeholders	Ongoing
2 & 3	Where relevant work with GBNSS on management plans for priority invasive non-native species that may be relevant for the Greater London area.	Response provided to any requests from GNNNS	LISI Steering Group/LISI Manager	Respond when required

Table 4. Mitigation, Control and Eradication Action Table

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13. Building Awareness and Understanding

Building awareness and understanding is largely the result of education programmes which are the focus of this section. Most INNS management actions within this plan include an element of education and awareness raising. Currently, these education actions are nested within the originating section and actions can range from educating the broad community, industry partners (such as importers who might have contact with introduction pathways) and other land managers (for sharing information such as best practice). As it is widely accepted that successful education programs have a defined audience and take home message, it is thought that these actions are best left nested in their relevant tables. Ideally this will enable a better link to the desired audience and message of the education program and increase effectiveness. Therefore, Table 4, below, has addressed the larger scale actions and broader strategies that are Greater London wide.

The points below have been considered in the development of the action table (Table 4, Building Awareness and Understanding):

1. Any existing programs that can be utilised or modified where possible to tap into existing resources.
2. Defining the program aim/s (i.e. who is targeted and what is the take-home message).
3. Ensure the program links to a clear action (i.e. what action do you want to change? A change in awareness or behaviour etc.).
4. Ensure that the education is aimed at appropriate groups and that the message is applicable for those groups.
5. Ensure work begins with stakeholders where biggest effect can be achieved

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
N/A	Develop a communications strategy to provide a framework for LISI to achieve its aims (focusing on longevity of campaigns, awareness building and overall understanding of INNS).	Communications plan completed, embedded and implemented.	LISI Steering Group/LISI Manager	
N/A	Assist with organising education days, workshops and training days for relevant stakeholders to provide consistency in resources being delivered within the London area (see action 1.A). Where possible work with existing programs and seek longevity i.e. 'train the trainer' days.	Educations days completed	LISI Steering Group/LISI Manager, Land management stakeholders, Awareness & public stakeholders	
ALL	Increase awareness of programs that provide a way for the community to assist in the detection, surveillance and monitoring of INNS. All relevant information to be shared with stakeholder groups.	Increased uptake of awareness programmes.	LISI Steering Group/LISI Manager, Awareness & public stakeholders	
2, 3 & 4	Bring together stakeholders working on the same species to share information and increase capacity to manage the species.	Evidence of information sharing between stakeholders	LISI Steering Group/LISI Manager, Academic & research stakeholders, Land management stakeholders	

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
ALL	Support other stakeholder groups (i.e. GBNSS) in their analysis and practical application of raising awareness and understanding in relation to INNS where appropriate.	Response provided to any requests from GNNNS	LISI Steering Group/LISI Manager	
N/A	Where feasible support and build on baseline data collected by GBNSS which assesses public attitudes and awareness of INNS issues (see Defra's Invasive Non-Native Species Framework Strategy, key action 9.1). This may need to be completed as part of a specific project to limit scope and will need to be completed in conjunction with any LISI Research subgroups formed (see action 6.B).	Baseline data recorded.	LISI Steering Group/LISI Manager, Awareness & public stakeholders, Academic & research stakeholders, GBNSS	

Table 5. Building Awareness and Understanding Action

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14. Legislative and Information Exchange Framework

Even though LISI does not have any regulatory powers, it is important, as with all activities in the modern world, to consider the relevant legislation before, during and after any management works.

Recently, the government saw the need to address the changing requirements of this industry and therefore a review of the current wildlife legislation was completed in 2012 by the Law Commission. Included in this review were a range of proposed amendments with consultation closing in November 2012. Due to these proposed amendments we have kept this section broad to ensure its flexibility, allowing it to remain current until any amendments are adopted. It is also important to note that this section highlights the need for industry stakeholders to become involved and engaged with the revision process of whatever bill or legislation is produced.

The points below have been considered in the development of the action table (Table 5, Legislative and Information Exchange):

1. Current and existing legislation.
2. Current best practice or other stakeholders past experience in dealing with current legislation.
3. Any direction provided in the way of circulars or publications produced by the government.

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
ALL	Assist stakeholders (i.e. Defra, GBNNSS) in requests to revise and provide comment on relevant INNS legislation, where appropriate.	Response provided to any requests.	LISI Steering Group/LISI Manager	Response when required
ALL	Where possible provide information sheets on relevant legislation as required with aims of reaching a range of stakeholders (see action 1.F).	Information sheets completed and provided on the LISI website.	LISI Steering Group/LISI Manager, Policy & influencing stakeholders	Ongoing
ALL	Maintain links with other government incentives and strategies through policy representation and remain up-to-date with developments.	Evidence of links with other programs and/or information sharing where appropriate.	LISI Steering Group/LISI Manager, Policy & influencing stakeholders	Ongoing
ALL	Work with GBNNSS, and other relevant stakeholders to drive a coherent strategic approach, while sharing and promoting best practice and promote evidence based action on INNS.	Response provided to any requests.	LISI Steering Group/LISI Manager, GBNNSS, All stakeholder groups	Ongoing

Table 6. Legislative and Information Exchange Framework Action

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15. Research

Research is, in many ways, crucial to the success of large scale landscape wide management projects. It provides informed direction on effective treatment methods and allows the adoption of 'evidence based approaches'. Additionally, research is able to provide evidence on the necessity and the effectiveness of management programs. This is important to help promote and complete work amongst the community, funding bodies and governments.

INNS research is being conducted throughout the world on a wide number of species and includes assessment of their effects on a variety of systems. This research ranges from applied research to theoretical modelling. Within the UK, there is a new push towards research of INNS, and it is a growing area of interest. Due to the increase in volume and importance of current research, there is a need for strong directional actions from the research community to allow effective and useful information exchange between the researchers and the land managers who are the end users.

The points below have been considered in the development of the action table (Table 6, Research):

1. Relevant existing research.
2. Researchers currently working on INNS and their location (e.g. Universities) throughout the UK and the world.
3. Current existing research gaps and/or needs, and who is identifying them

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
ALL	Establish an academic subgroup for London to assist in focussing research on species identified as potential emerging risks and to broaden the evidence base for impacts of these invasive non-native species.	Established group and evidence of directed research.	LISI Steering Group/LISI Manager, Research subgroup	Medium term
1, 2, 3, 4, & 5	Provide new up-to-date information to be distributed to relevant land managers to assist with the direction of proposed works so that they are in-line with relevant research and best practice models.	Evidence of works being linked to current relevant best practice models and current research.	LISI Steering Group/LISI Manager, Research subgroup	Ongoing
N/A	Create a database where stakeholders can register specific INNS questions so that this can be linked with research to create highly relevant research outcomes.	Database created which can provide direction to researchers.	LISI Steering Group/LISI Manager	Ongoing

Relevant category	Action	Deliverables	Persons responsible	Timeframe /priority
N/A	Where possible encourage collaborative partnerships to increase efficiency and the profile of research in the INNS field and share information (linked to action 4.E).	Collaborative partnerships created and evidence of information sharing between stakeholders.	LISI Steering Group/LISI Manager, Research subgroup, Academic & research stakeholders, Land management stakeholders	Ongoing
ALL	Support stakeholders where possible, in searching and applying for grant funding to achieve LISI aims.	Response provided to any requests.	LISI Steering Group/LISI Manager, Research subgroup	Respond when required
ALL	Work with volunteer organisations, government bodies and other stakeholders to help develop programs to facilitate the collection of INNS data to increase research, management and general capacity building potential. This data is to be stored on the LISI database to be developed (linked to action 4.D).	Partnerships with volunteer organisations, government bodies and other stakeholders created.	LISI Steering Group/LISI Manager, Research subgroup, All stakeholder groups	Ongoing

Table 7. Research Actions

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16. Implement, Monitor and Review

Much of the implementation of this action plan is the responsibility of the LISI members, LISI steering group and the LISI manager, although roles in the organisation and completion of the actions will vary. Generally, the LISI steering groups and manager will support the initial organisation of the activities with works radiating out to other interested and relevant stakeholders. LISI will rely on the joint commitment between these groups and additional relevant and interested stakeholders; the action plan's success will therefore be dependent on these factors.

The success of any action plan should be demonstrated through revision of its deliverables, therefore these along with priorities and timeframes have been included.

This also provides tangible outcomes for any stakeholders that are using the action plan to provide direction for their INNS management programmes. Monitoring (and general data recording) of deliverables should not be an overly formal and strenuous program.

In brief, it will need to include information about the nature of the project as well as useful information resulting from the project, such as:

1. What was the project?
2. What were the project's aims and objectives?
3. What method was used to carry out the project, from development to promotion and execution?
4. What were the deliverables?
5. Were the deliverables achieved and if so did they meet the aim and objectives?
6. Was any data collected as part of this project, if so what? (e.g. species distribution, preference etc.)?

It is important to note the need to monitor the individual projects and INNS on different scales: local, district and regional. This is to be achieved through each project as monitoring and data collection requirements will differ.

Initially, brief annual reviews of the plan will be completed to ensure that the direction and focus are in line with the requirements of this changing industry. These reviews will allow reporting on the success of the action plan and allow for updates that may be required (i.e. in regards to legislation). It will also provide an opportunity for the stakeholders using and targeted by the document to provide feedback on the effectiveness of the plan and the appropriateness of the deliverables.

Ensuring the long term sustainability of this action plan is necessary as INNS require continual on-going management both in terms of prevention works and management of existing populations. These management actions require a sustainable program due to the ongoing commitment required for success. The initial reviews will ensure that the action plan is targeted appropriately to foster suitability and sustainability.

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17. What's next, what can I do?

LISI will continue to work to achieve these actions; the majority of these works will need to be ongoing and will rely heavily on partnerships between many different stakeholders to ensure success. Due to the reliance on outside factors and the ongoing changing needs of the INNS industry, these actions will need to be completed with consideration of current trends and as opportunities arise.

What can you do?

Your role will differ greatly depending on whether you are a land manager or an interested member of the public. Therefore, we have included below a general list of actions to assist with overall INNS management. It is important to see how each of these potential issues can be addressed through the unique position that you or your organisation is currently in.

Everyone

- Report a priority site – this can be done by emailing enquiries@GiGL.org.uk with the details.
- Record and report invasive non-native species to LISI via the [GiGL website](#).

Industry

- Get to know relevant INNS present or thought to become present in London (relevant to your location, habitat type etc.).
- Monitor and take part in any early detection and/or monitoring programs, specifically where any high risk pathways have been identified.
- Map INNS populations present within your local areas where possible. Share all relevant information with LISI who will be able to help with any actions required. This will allow information to be used in strategic landscape scale approaches locally as well as on a nationwide level.
- Work with partners/neighbours to address INNS in a catchment wide approach.
- Monitor and continue to manage existing INNS populations.
- Share information where appropriate to increase understanding of INNS management within the Greater London area.

Community

- Get to know relevant INNS present or thought to become present in London (relevant to your location, habitat type etc.).
- Get to know your local area and assist in collecting information/data on the local distribution of species. Make sure that this information is shared with those that need it (e.g. Local Boroughs, Greenspace Information for Greater London).
- Get involved with community volunteer INNS programs where possible.

Contact us

For further information, or if you have any further questions or concerns, contact enquiries@GiGL.org.uk.

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References

- CABI, 2010. *The Economic Cost of Invasive Non-Native Species on Great Britain*. Centre for Agricultural Bioscience International.
- COMEST, 2005. *The Precautionary Principle*. World Commission on the Ethics of Scientific Knowledge and Technology. UNESCO.
- Defra, 2003. *Review of Non-Native Species Policy, Report of the Working Group*. Department of Environment, Food and Rural Affairs.
- Defra, 2007. *Conserving Biodiversity – The UK Approach*. In conjunction with the UK Biodiversity Partnership. Department of Environment, Food and Rural Affairs.
- Defra, 2008. *The Invasive Non-Native Species Framework Strategy for Great Britain*. Department of Environment, Food and Rural Affairs.
- Defra & Forestry Commission, 2011. *Action Plan for tree health and plant biosecurity*. Department of Environment, Food and Rural Affairs and the Forestry Commission.
- Defra, 2011. *Helping to prevent the spread of invasive non-native species; Horticultural Code of Practice*. Department of Environment, Food and Rural Affairs.
- EEA, 2010. *Towards an early warning and information system for invasive alien species (IAS) threatening biodiversity in Europe*. European Environment Agency Technical report No 5/2010.
- GLA, 2002. *Connecting with London's Nature; The Mayor's Biodiversity Strategy*. Greater London Authority.
- JNCC & Defra, 2009. *UK Post-2012 Biodiversity Framework*. Joint Nature Conservation Council and Department of Environment, Food and Rural Affairs.
- Law Commission, 2012. *Consultation Paper No 206*. Wildlife Law; A Consultation Paper.
- UK Technical Advisory Group on the Water Framework Directive, 2008. *Revised classification of aquatic alien species according to their level of impact, working paper version 3*.
- Shine, C., Kettunen, M., Genovesi, P., Essl, F., Gollasch, S., Rabitsch, W., Scalera, R., Starfinger, U. and Brink, P. 2010. *Assessment to support continued development of the EU Strategy to combat invasive alien species*. Final Report for the European Commission. Institute for European Environmental Policy (IEEP), Brussels, Belgium.