



## Wear Catchment Invasive Non Native Species: Initial Strategy

Version 1 May 2018

### Context

Unlike neighbouring catchments, Tyne and particularly Tees, there has been little Invasive Non Native Species work delivered across the Wear catchment. Initial Defra funding to set up Local Action Groups to manage INNS in 2012-13 was not accessed at that time. Subsequently INNS were not established as a valid driver for EA WFD investment and applications to other funders have not been successful. There is a need to establish an initial strategy and programme to build on existing stakeholder interest and to create momentum.

### Background

#### What are Non-Native Species?

Non Native species are animals and plants that have been moved outside of their natural range by human action, whether intentional or not.

#### What are Invasive Non-Native Species?

Invasive non-native species (INNS) are those that have been transported outside of their natural range and that can damage our environment, environmental services, the economy, our health and the way we live. Impacts of INNS are so significant, they are considered to be one of the greatest threats to biodiversity worldwide. They threaten not only the survival of rare native species and damage sensitive ecosystems and habitats, but can, over time, remove even the most common species from an area through aggressive colonisation.

### Scope

This initial strategy will concentrate on 3 widespread species: giant hogweed, japanese knotweed and himalayan balsam discussed in detail below. It is referenced in the Wear Catchment Partnership Business Plan (2017-2030) as a Full Catchment priority and will be further referenced in a restricted number of short term priority (2017-2020) sub catchments:

- Upper Wear
- Old Durham Beck
- Lumley Park Burn
- Deerness
- Gaunless

### Strategy Objectives

Objective 1: Reduce the risk of the introduction and spread of INNS to and within the Wear catchment.

Output 1.1 – Ensure that key stakeholders are aware of:

- 1) Priority INNS and their ecological and economic impacts



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2) The potential pathways for introduction and spread of INNS

3) Good management practices to prevent introduction and spread of INNS

Objective 2: Establish a framework for the detection and surveillance of INNS, linked to a protocol to ensure a rapid management response.

Output 2.1 Establishment of a reporting system for INNS in priority catchments

Output 2.2 Develop strategic monitoring of INNS in priority catchments

Objective 3: Build on existing coordinated and sustainable control and eradication programmes for INNS and share expertise with others

Output 3.1 Coordinated control, eradication and habitat restoration programmes.

Objective 4: Establish a sustainable management framework to coordinate actions of local and catchment-based partners

Output 4.1 A local management framework for the prevention, detection, monitoring and control of INNS

These objectives are in accordance with the elements of the INNS Framework Strategy for Great Britain, which are;

- Prevention;
- Early detection, surveillance, monitoring and rapid response;
- Mitigation, control and eradication.

### Global Overview

INNS are considered the biggest threat to biodiversity after Global warming and habitat loss. The ever increasing global movement of goods, materials and people pose a very real and significant threat to biodiversity worldwide. The biosecurity of the British Isles is no longer helped by our being an Island state. Global commerce and industry as well as global warming have all helped to put Britain in danger of increasing infiltration by INNS from around the world.

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 ecological or economic consequences.

### National Overview and Strategy

The UK has international obligations to address INNS issues, principally through the Water Framework Directive and the EU Habitats and Birds Directives, the Convention of Biological Diversity



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including the International Plant Protection Convention and the Bern Convention on Conservation of European Wildlife and Habitats.

The actions presented in this plan conform to and are supported by UK Government legislation associated with the prevention, management and treatment of INNS, diseases and parasites.

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 eradicate 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.

Successful implementation of this strategy requires 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.

This plan provides a basis for local action to address the Wear catchment's INNS biosecurity issues. It has an adaptive lifespan of five years and, its outcomes and impacts will be reviewed and incorporated into subsequent versions of the plan. Although it is not a legal instrument per se, it utilises existing legal and regulatory instruments. As such the implementation of this plan will rely on the formation of strong local partnerships founded on solid legal and policy principles by interested parties.

The plan proposes partnership working to address the complex issues associated with INNS biosecurity. It therefore adopts the agreed approach of the national Initiative for the prevention, early detection and control of INNS. As the spread of INNS is not isolated to the Wear catchment, this plan will also facilitate coordination and communication with neighbouring catchment projects.

The implementation of this plan will bring many environmental and socio-economic benefits. A summary of these is given below:

- Increased and safeguarded biodiversity within the catchment area and the conservation of important habitats and recreational areas.
- Contribution to the achievement of High Ecological status throughout the catchment through addressing Water Framework Directive actions.



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- Visual conservation and increased amenity value of local landscapes, especially with respect to the improved control of INNS where for example these currently impede access or degrade visual impact.
- Collaborative control of existing widespread species such as Japanese knotweed, Himalayan balsam and giant hogweed all of which can have adverse economic impacts.

Given the high cost estimates for the mitigation, control and eradication of INNS once they are established, this plan emphasises the need for prevention and rapid response to the introduction of INNS before they become established. The multiplicity of pathways for entry and spread as well as the persistence of many of these species means that a partnership approach involving diverse partners to prevent introductions is essential. It emphasises the requirement for increased public awareness and engagement, optimisation of the use of resources and the provision of clear guidance necessary to address the freshwater biosecurity issues within the Wear catchment. It is also consistent with GB Invasive Non-Native Framework Strategy.

### INNS Priorities within the Wear catchment

This section identifies INNS, for inclusion in plan and will be the main focus for action. Other species referenced in the amended Wildlife and Countryside Act 1981 have not yet been considered in this initial strategy. The priority species are identified as those that are already widespread within the catchment.

#### Japanese knotweed (*Fallopia japonica*).

New colonies are formed by movement of plant fragments from infected area in water courses, through the movement of plant debris in soil and on vehicles, dumped garden waste and by well-meaning people trying to remove the plants by cutting and digging. It forms dense thickets which can exclude native plants and prohibits regeneration. Dense growth of Japanese knotweed can also hinder access, reduce biodiversity and alter the habitat for wildlife. It is also known to damage manmade structures and materials and the rhizomes are capable of entering underground sewers, drains and land-drains through the smallest of cracks or gaps. If small sections of the rhizome then break off, this will allow the plant to spread large distances through the network.

Plate 1: Japanese Knotweed



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### Japanese Knotweed Management

- Publicise the significance of this INNS in terms of environmental, ecological and economic importance
- Establish the pathways by which the Japanese knotweed was introduced and prevent any re-occurrence (e.g. if from dumped garden waste, inform local residents of the importance of disposing of Japanese knotweed correctly)
- Ascertain landownership and gain access to carry out eradication work
- Discourage stakeholders eg angling clubs, from trampling, cutting or pulling out the Japanese knotweed in case fragments of shoots or roots were dislodged and sent downstream and forming new colonies
- Make sure everyone is aware of the importance of Check, Clean and Dry when entering or exiting the area.
- Monitor the area for re-growth and plan re-treatment.

### Giant hogweed (*Heracleum mantegazzianum*)

Giant hogweed was first recorded in the wild in the UK in the late 19th century. It spreads solely by seeds, mainly through deliberate planting, wind dispersal and in water courses. Now common across much of the UK

The source of the infestation which runs along the Wear through and beyond Durham City to Chester le Street is at the top of the Old Durham Beck catchment. It spreads through seed dispersal and the movement of soil contaminated by its seeds. It is a public health hazard due to the toxins in the sap reacting with UV light to blister skin. Giant hogweed out competes native vegetation for space and resources and can result in a loss of plant and invertebrate diversity. Dense stands can



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hinder access. Winter dieback exposes soil to erosion with loss of river banks and increased sedimentation. Seed are viable for up to 21 years, which means that seeds too lowdown in the soil to germinate which are exposed due to bank-erosion, will add to the new stands of plants in the following years.

Contact with any part of this plant must be avoided as even minute amounts of sap can cause blistering of the skin following exposure to sunlight. Other negative impacts include out-competing native flora, river bank erosion and increase in flood risk. Can cause delays/additional costs on development sites where the plant must be removed as controlled waste in order to comply with legislation.

Plate 2: Giant Hogweed



### Giant Hogweed Management

- Make sure everyone is aware of the importance of Check, Clean and Dry when entering or exiting the area.
- Ascertain landownership and gain access to carry out eradication work
- Publicise the significance of this INNS in terms of environmental, ecological, economic and safety importance
- Due to the photo toxicity of the sap, all relevant precautions should be taken when working on Giant hogweed
- Monitor the area for re-growth and plan re-treatment.



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### Himalayan balsam (*Impatiens glandulifera*)

This weed is widespread throughout the Wear catchments. Its seeds are spread through natural dispersion by exploding (dehiscent) seed pods, which can eject the seeds over several meters and via water from areas in which it has been introduced through the transport of contaminated soil. It forms thick monospecific stands that can shade out low level native plants reducing biodiversity and denuding river banks of understory vegetation. Winter dieback of the plants exposes soil to erosion. Himalayan balsam is an annual plant. It prefers moist soils but will grow anywhere. Himalayan balsam grows up to 3 m tall and is the tallest annual plant found in the UK. Introduced from the Western Himalayas, it is now recorded throughout Britain. It grows rapidly, spreads easily, out-competes other vegetation and readily colonises new areas. When the plants die down in winter they leave large bare areas that are sensitive to erosion, particularly along the banks of rivers and streams.

Plate 3: Himalayan Balsam in flower





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Plate 4: Stand of Himalayan Balsam

### Himalayan balsam Management

- Make sure everyone is aware of the importance of Check, Clean and Dry when entering or exiting the area.
- Ascertain landownership and gain access to carry out eradication work
- Publicise the significance of this INNS in terms of environmental, ecological and economic importance
- Be aware when working next to waterways, as the previous generations of Himalayan balsam may have weakened the banksides
- Pulling the plants out by the roots is the quickest and easiest way of removing it. It can be mechanically cut
- Removal should be carried out prior to seed setting in the late summer / early Autumn
- Monitor the area to make sure the Himalayan balsam does not return.

### **Approach**

Although the distribution of Invasive species is widespread within the catchment area, there has been little or no overall planning for action to address this significant problem.

### Community and Stakeholder Participation.

Local community and interest groups have been understandably, tackling the problems on a local basis i.e. on sections of the Wear and or its tributaries which affect their immediate locations and interests. These efforts have been varied in their effectiveness due to unmanaged upstream infestations,



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volunteer and equipment availability, funding for resources, accessibility to land and its ownership and expert advice on how best to tackle INNS.

Once an invasive species is present within an area, the chances of it establishing itself are very high. Once it has become established, the chances of it spreading are almost certain. Once it spreads the chances of it infecting other areas and creating further colonies is no longer a probability but a certainty. Loss of amenity, walking, fishing, less wildlife, hazard to health, knotweed impacts house prices.

With very few exceptions, if an invasive non-native species is in an area, it has come from another established colony somewhere nearby. Increasing in numbers it can soon restrict the use of land or waterways by sheer volume of numbers. In the cases of Himalayan balsam and Giant hogweed, riverbank erosion may occur and overtime the loss of land can be significant.

Effective partnership working with stakeholders is essential, through established local conservation groups, individual angling clubs and through the Wear Angling alliance.

Catchment partners work with stakeholders to identify, map to GIS and repeatedly manage infested sites on a structured and strategic basis, working from the headwaters of Wear and its individual sub catchments downstream. It is estimated that 1km of treatment will have a beneficial impact on a further 1 km downstream by restricting the new supply of seed or other regenerative material. Dates, areas and treatments will be recorded. Areas will be re-treated as required.

Supervising staff and volunteers are trained in the use of control methods and equipment, utilising knapsack spraying and stem injection for hogweed and knotweed with hand pulling used to control balsam as outlined in table 1 below.



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Table 1. Showing control methods for priority INNS

INNS	Chemical	Physical	Mechanical	Biological
<b>Giant hogweed</b>	Stem injection or spraying with Glyphosate (Roundup)	Cutting through the root 10cm below the crown will kill the plant. Cutting the stem will prevent seed production. Caution must be taken as the sap is phototoxic	Flailing with a strimmer should not be carried out, due to the phototoxic effects of the sap	No Biological control is available
<b>Japanese knotweed</b>	Stem injection or spraying with Glyphosate (Roundup)	A single clean cut should be made near the base.	Cutting methods that produce fragments, such as flailing should be avoided	No Biological control is available
<b>Himalayan balsam</b>	Spraying with Roundup can be done, but it is more cost effective to pull plants out	Pull plants out by the roots. Control measures should aim to prevent flowering, and are best carried out before June for maximum effectiveness.	Strimming can be very effective on large areas.	No Biological control is available

### Guidance to Stakeholder Partners

Established local conservation groups and angling clubs will have the organisational skills to run their own events which will be tracked and co-ordinated under the auspices of this strategy. The Catchment Partnership will be able to support independent efforts through the provision of equipment, training, tools, help with risk assessments and general guidance detailed below:

#### Planning the Event: Clarity on Goals and Objectives

- Increase awareness in your area of the problems associated with non-native invasive species; parish mags, local press etc



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- Determine appropriate location(s). Utilise GIS mapping.
- Get permission in writing from local government or landowner – template letter available if required.
- Advertise the event through as many outlets as possible – pub, local shop put a BBQ on and have it sponsored etc
- Ensure all the necessary tools and equipment are available. – we can advise and help with equipment
- Create and print instruction sheets for volunteers, including health and safety issues and biosecurity requirements – risk assessment templates are available if required.

### Delivering the Event

- Set realistic goals based on the number of volunteers available and the scope of the infestation.
- Consider approaching local businesses to sponsor an event/stretch of river, eg contribute to the cost of consumables and protective equipment.
- Ensure volunteers are properly equipped, briefed and trained where necessary.
- Leave material which has been dug up, cut up or chemically treated on site unless otherwise advised

### Post Event

- Update the catchment INNS co-ordinator with the area treated
  - Monitor the site for sites of regeneration.

### **Catchment Partners and Stakeholders**

#### Local Authorities

The majority of work in controlling INNS along the riverside is carried out by the local authorities. In most cases only those areas designated as public pathways or rights of ways receive any form of maintenance. Chemical spraying of INNS is carried out to a width of two meters either side of the path.

Local authorities have the ability under section 79 of the Environmental Protection Act (1990), to take enforcement action where giant hogweed is, or is likely to be, prejudicial to health. Such circumstances may include where the giant hogweed is growing along pathways or is growing on land which is easily accessible to users or passers-by.

#### The Environment Agency

At present, the Environment Agency only regularly treats areas of riverside which are designated for flood defence.

#### Northumbrian Water



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As a utility company, Northumbrian Water has a number of sites situated along the Wear and some of its tributaries. The company have a chemical treatment programme which involves both the monitoring and chemical treatment of INNS on their land.

### Environmental Non-Governmental Organisations

Wear Rivers Trust, Groundwork North East & Cumbria and Durham Wildlife Trust are all active members of the Wear Catchment Partnership and together with the DCC Countryside Team are experienced in working with volunteers.

### Local Angling Clubs and the Wear Angling Alliance

As a major user of the freshwater environment, and key audience angling clubs have a very important part to play in the control and eradication of invasive non-native species. Club volunteers carry out bankside clearance days as well as individual members clearing around pegs prior to fishing.

Although angling clubs are carrying out vital work, it is still a localised effort, controlling INNS within very specific areas and sometime only adjacent to the pegs being fished on the clubs' waters. This strategy aims to provide a framework to maximise angler participation.

### Local boating & canoe clubs

Recreational boat and canoe use within the catchment is a very popular pastime. With increasing numbers of boats and canoes entering the catchments' watercourses from other parts of the country, it is extremely important that the message of Check Clean and Dry is publicised.

Table 2 shows potential INNS pathways and relevant stakeholders

Pathways	Primary Partners
Intentional introduction or planting	Local Councils and Planning departments
Fouling and ballast water of freshwater vessels	Recreational water users and boat operators, local canoe and water sports organisations
Sale from garden or pond centres	Horticultural Trade Association/Ornamental Fish Producers
Contaminated water sports equipment e.g. from anglers, canoeists, and contaminated water as a medium for live fish transport	Recreational water users, fishery owners and angling clubs
Escape and spread from fish farms, ponds and gardens	Aquaculture, angling industry, riparian and lakeshore owners, members of the public, angling clubs
Movement of contaminated soils or vehicles	Local Councils, EA, farmers, building contractors



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Movement of hired machinery used across catchments for in-river engineering work	Engineering hire companies, Local Councils, farmers, EA, engineering contractors
Improper control and disposal measures e.g. cutting and dumping without treatment	Local councils, EA, riparian owners, landscaping contractors, members of the public
Fish Stocking	EA, CEFAS, Angling clubs, Fish Farm suppliers