

# Freshwater Biosecurity Plan

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*Prepared for:*



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## 1. Definitions

### 1.1 What is Biosecurity?

Biosecurity literally means 'safe life'. It refers to taking action in order to minimise the risk or prevent the movement or transmission of invasive non-native species and diseases.

### 1.2 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 the survival of rare native species and damage sensitive ecosystems and habitats.

## 2. Summary

This biosecurity plan addresses freshwater and riparian INNS. Introduction of either new plant material or animal species could have devastating effects.

The actions will be achieved through the realisation of objectives which are in accordance with the [Invasive Non Native Species Framework Strategy for Great Britain<sup>1</sup>](#) and established protocols for notifiable fish diseases:

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

The actions in this plan also follow national advisory guidelines for biosecurity<sup>2</sup>.

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<sup>1</sup> [www.nonnativespecies.org](http://www.nonnativespecies.org)

<sup>2</sup> <https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?sectionid=58>

### 3. Objective and Outputs

**Objective:** Reduce the risk of the introduction and spread of INNS to any sites worked on or visited by South Cumbria Rivers Trust.

Output 1.1 – All staff working on a site are aware of the ecological and economic impact of INNS, means of introduction and spread.

Output 1.2 – All vehicles, machinery and equipment used on a site are cleaned and disinfected both pre and post works. Drying carried out wherever possible.

Output 1.3 – Public who have access to sites are made aware of the means of INNS introduction, spread and simple biosecurity measures.

### 4. The Context

#### 4.1 Freshwater Invasive Non-Native Species: the Nature of the Problem

Freshwater INNS are of increasing ecological and economic significance. Natural barriers to the movement of species such as oceans and mountains have meant that unique ecosystems have developed throughout the world. The modern phenomenon of globalisation has expanded the possibilities, extent and complexity of world trade which along with the growth of tourism has expanded hugely the movements of people, commodities and products. This has increased unintentional and intentional introductions of species outside their natural range, and establishment of INNS away from their co-evolved competitors and predators.

In this plan, biosecurity issues are considered in relation to the potential introduction and spread of a priority list of INNS, diseases and parasites.

There are thousands of non-native species in the UK, only a minority of which are invasive. It is this small but significant number of INNS that have a major impact on the native flora and fauna.

According to the [Convention on Biological Diversity \(2006\)](#)<sup>3</sup>, INNS are the second greatest threat to biodiversity, being capable of colonising a wide range of habitats and excluding the native flora and fauna. Furthermore, over the last 400 years INNS have contributed to 40% of those animal extinctions where the cause of extinction is known. As water is an excellent transport medium for the dispersal of many of these species, rivers and lakes and their banks and shorelines are among the most vulnerable areas for the introduction, spread and impact of these species. The ecological changes wrought by Freshwater INNS can further threaten already endangered native species and reduce the natural productivity and amenity value of affected habitats.

The threat from Freshwater INNS is growing at an increasing rate exacerbated by climate change, pollution and habitat disturbance with a correspondingly greater socio-economic, health and

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<sup>3</sup> <http://www.cbd.int/invasive/>

ecological cost. Many countries including the UK are now facing complex and costly problems associated with invasive species:

- The most recent estimate in 2008<sup>4</sup> for the whole country for the control, management and disposal of floating pennywort was £1.93 million.

Many freshwater INNS are incredibly well adapted to survival, and therefore easily transferred between sites:

- The killer shrimp (*Dikerogammarus villosus*) can survive for 48 hours in dry conditions and 15 day in damp conditions;
- Floating pennywort (*Hydrocotyle ranunculoides*) can reproduce from a tiny fragment and can grow up to 20cm a day;
- Japanese knotweed (*Fallopia japonica*) can reproduce and spread from a piece of root/rhizome only 0.6 grams;
- A single plant of Himalayan balsam (*Impatiens glandulifera*) produces up to 800 seeds;
- The crayfish plague (*Aphanomyces astaci*) is a fungus which can survive between 6-22 days without a host under damp conditions.

Without some form of coordinated and systematic approach to the prevention of introduction of INNS, diseases and parasites, it is inevitable that the ecological, social and economic impacts and the costs for mitigation, control and eradication of these species and diseases will continue to increase. This plan is to set out such an approach for South Cumbria Rivers Trust.

Given the high cost estimates for the mitigation, control and eradication of freshwater INNS and diseases once they are established, this plan emphasises the need for prevention of the introduction of INNS **before** they become established.

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<sup>4</sup> Newman, quoted in EPPO 2010

## 5. Policy and Legislation

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

- Section 14 of [The Wildlife and Countryside Act \(1981\)](http://www.legislation.gov.uk/ukpga/1981/69)<sup>5</sup> makes it an offence to allow any animal (including hybrids) which is not ordinarily resident in Great Britain, to escape into the wild; or release it into the wild; or to release or to allow to escape from captivity, any animals that is listed on Schedule 9 of the 1981 Act. It is also an offence to plant or otherwise cause to grow in the wild any plant listed on Schedule 9 of the 1981 Act. This list was expanded in March 2010 and now includes many of the country's most problematic aquatic and riparian INNS.
- [The Environmental Protection Act 1990](http://www.legislation.gov.uk/ukpga/1990/43)<sup>6</sup> contains a number of legal provisions concerning "controlled waste", which are set out in Part II. Any soil contaminated with Japanese knotweed or giant hogweed or plant material discarded is classified as controlled waste. This means that it is an offence to deposit, treat, keep or dispose of controlled waste without a licence.
- [The Waste Management Licensing Regulations 1994](http://www.legislation.gov.uk/uksi/1994/1056)<sup>7</sup> define the licensing requirements which include "waste relevant objectives". These require that waste is recovered or disposed of "without endangering human health and without using processes or methods which could harm the environment".
- [Controlled Waste \(Registration of Carriers and Seizure of Vehicles\) Regulations 1991](http://www.legislation.gov.uk/uksi/1991/1624)<sup>8</sup> and the [Environmental Protection \(Duty of Care\) Regulations 1991](http://www.legislation.gov.uk/uksi/1991/2839)<sup>9</sup> provide guidance for the handling and transfer of controlled waste.

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<sup>5</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

<sup>6</sup> <http://www.legislation.gov.uk/ukpga/1990/43/contents>

<sup>7</sup> <http://www.legislation.gov.uk/uksi/1994/1056/contents/made>

<sup>8</sup> <http://www.legislation.gov.uk/uksi/1991/1624/contents/made>

<sup>9</sup> <http://www.legislation.gov.uk/uksi/1991/2839/contents/made>

- [The Import of Live Fish Act \(1980\)<sup>10</sup>](#) and the [Prohibition of Keeping Live Fish \(crayfish\) Order \(1996\)<sup>11</sup>](#). The former restricts in England and Wales the import, keeping or release of live fish or shellfish or the live eggs or milt of fish or shellfish of certain species. Under the Crayfish Order it is an offence to keep any crayfish in England and Wales, except under license with the exception of the Signal crayfish in specified areas of the country with established feral populations. A license is required to keep signal crayfish in those parts of England and Wales where extensive feral populations do not currently exist.
- Local authorities also have some relevant powers in Section 215 of the [Town and Country Planning Act 1990<sup>12</sup>](#). This provides the authority with a discretionary power to require landowners to clean up 'land adversely affecting the amenity of the neighbourhood' which may be relevant to control of FINNS such as Japanese knotweed.
- [Biodiversity 2020: A Strategy for England's wildlife and ecosystem services<sup>13</sup>](#) This Strategy lists invasive non-native species as one of the direct environmental pressures on biodiversity and has a priority action.
- The [NetRegs<sup>14</sup>](#) website contains useful guidance on FINNS and their control

The procedures for the detection, notification and control of fish diseases are already well defined by fisheries legislation. They provide a system of screening fish farms and fisheries for notifiable diseases as well as regulating live fish movements. CEFAS on behalf of the Government organises and coordinates the response to any suspected outbreak.

Biosecurity advisory notes have been produced by the Environment Agency following the first outbreak of the killer shrimp (*Dikerogammarus villosus*) in 2010<sup>15</sup>.

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<sup>10</sup> <http://www.legislation.gov.uk/ukpga/1980/27>

<sup>11</sup> <http://www.legislation.gov.uk/uksi/1996/1104/contents/made>

<sup>12</sup> <http://www.legislation.gov.uk/ukpga/1990/8/contents>

<sup>13</sup> <http://www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-110817.pdf>

<sup>14</sup> <http://www.netregs.gov.uk/>

<sup>15</sup> <https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?pageid=325>

## 6. Biosecurity measures

Some of the works that South Cumbria Rivers Trust carry out will involve using a range of equipment and machinery. The following actions must be implemented in order to significantly reduce the risks of any INNS or biological matter being introduced to the site during any in water works.

### 6.1 Pre-works

Action	Requirements
All previously used (i.e.- not new) equipment to be used must be thoroughly cleaned and dried to the touch PRIOR to site access.	<ul style="list-style-type: none"> <li>• Remove as much soil and organic matter as possible before disinfecting (using Virkon S)</li> <li>• Particular attention must be paid to areas that retain water, remain damp or are hard to inspect</li> <li>• Clean with water, or disinfectant<sup>16</sup> at the store BEFORE transported to site.</li> <li>• Boat bio fouling must be thoroughly removed</li> <li>• Crevices on an outboard engine or any equipment or machinery need to be washed out</li> <li>• Washings should be DRIED OUT on a surface (such as gravel/hard-standing or grass), and NOT able to enter any watercourse or drainage system</li> <li>• Dry out totally before access onto new site.</li> <li>• See '<a href="#">Check Clean Dry</a>'</li> </ul>
Cleaning station / kit to be set up at each work site.	<ul style="list-style-type: none"> <li>• Must be readily accessible</li> <li>• Must be well away from a watercourse and drainage into sewers prevented.</li> <li>• Wash down facilities (buckets, scrubbing brushes, disinfectant, hand pump pressure sprayer etc) installed</li> <li>• Must have a surface (such as gravel/ hard-standing / grass) where washings</li> </ul>

<sup>16</sup> Recommended disinfectant is Virkon S

[http://www2.dupont.com/DAHS\\_EMEA/en\\_GB/products/disinfectants/virkon\\_s\\_tablets.html](http://www2.dupont.com/DAHS_EMEA/en_GB/products/disinfectants/virkon_s_tablets.html)



	<p>should be contained, DRIED OUT, and NOT able to enter any watercourse or drainage system.</p> <ul style="list-style-type: none"> <li>• See <a href="#">‘Check Clean Dry’</a></li> </ul>
Staff training and awareness	<ul style="list-style-type: none"> <li>• All staff working on site to be trained to identify specific INNS. Attend and understand tool-box talk. Aware of the ecological and economic impact of INNS, means of introduction and spread and simple biosecurity measures.</li> </ul>

## 6.2 During works

Action	Requirements
Cleaning station / kit to be used before access to or leaving the site each day.	<ul style="list-style-type: none"> <li>• Must be readily accessible</li> <li>• Must be well away from a watercourse and drainage into sewers prevented.</li> <li>• Wash down facilities (buckets, scrubbing brushes, disinfectant, hand pump pressure sprayer etc) installed</li> <li>• Remove as much soil and organic matter as possible before disinfecting (using Virkon S)</li> <li>• Boat bio fouling must be thoroughly removed</li> <li>• Crevices on an outboard engine or any equipment or machinery need to be washed out</li> <li>• Must have a surface (such as gravel/ hard-standing / grass) where washings should be contained, DRIED OUT, and NOT able to enter any watercourse or drainage system.</li> </ul>

### 6.3 Post works

Action	Requirements
<p>All equipment must be thoroughly cleaned before leaving the site if practicable, or when returned to the storage facility.</p>	<ul style="list-style-type: none"> <li>• Must be readily accessible.</li> <li>• Must be well away from a watercourse and drainage into sewers prevented.</li> <li>• Must have a surface (such as gravel/ hard-standing / grass) where washings should be contained and DRIED OUT, and NOT able to enter any watercourse or drainage system.</li> <li>• Wash down facilities (buckets, scrubbing brushes, disinfectant, hi-pressure hose etc) installed.</li> <li>• Boat bio fouling must be thoroughly removed.</li> <li>• Crevices on an outboard engine or any equipment or machinery need to be washed out.</li> <li>• Dried out totally to the touch before use elsewhere.</li> </ul>

### Public awareness

Certain sites will allow public access. It is important to raise awareness and understanding of freshwater biosecurity to all that use the water body. This can be done through a range of display materials on site and active public engagement.

For more information about display materials available, contact the CFINNS Initiative Coordinator.

## 7. Objective realised

**Objective:** Reduce the risk of the introduction and spread of INNS to any work sites.

Output 1.1 – All staff working on the site are aware of the ecological and economic impact of INNS, means of introduction and spread.

*Action in place – Tool-box talk, staff training and awareness.*

Output 1.2 – All vehicles, machinery and equipment used on the site to be or are cleaned, disinfected and dried pre and post works.

*Action in place – Cleaning stations installed and only clean and dry, or new equipment to be used.*

Outputs 1.3 – Public who have access to sites are made aware of the means of INNS introduction, spread and simple biosecurity measures.

*Action in place – awareness materials displayed and active public engagement.*

Due diligence will be required to avoid any biological pollution of freshwater. On completion, the aim is that any work sites will be returned as close to its “as found” condition as possible.