

INVASIVE ALIEN SPECIES

ADVICE FOR PLANNING OFFICERS AND APPLICANTS SEEKING PLANNING PERMISSION FOR DEVELOPMENTS ON LAND CONTAINING INVASIVE ALIEN SPECIES

ISSUE 02 APRIL 2017

Introduction

The overall aim of the Northern Ireland Biodiversity Strategy is to safeguard our biodiversity. One of the main impacts on biodiversity is from invasive alien species.

Many non-native (exotic/alien) species have been intentionally or unintentionally introduced into Northern Ireland from around the world. Many of these non-native species are important to our economy and society, in particular agricultural and garden plants. They are valued both commercially and aesthetically and have not become established outside human influenced habitats. However some non-native species become 'invasive'. Invasive alien species are defined by the Convention on Biological Diversity 1993 as an alien species whose introduction and/or spread threatens biodiversity. Once established, invasive alien species can have a wide range of economic, environmental and social impacts.

The ecological effects of invasive species are often detrimental and, once established, they can be extremely difficult and costly to control and eradicate. Development activity, such as construction works can aid the spread of invasive alien species. Therefore, when invasive alien species are present on a proposed development site, planning authorities must consider the likely consequences of this and ensure measures are taken to prevent their spread.

Legislation

It is an offence under Article 15 of the Wildlife (Northern Ireland) Order 1985 (as amended) for any person to plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9 of the Order (shown in Table 1). It should be noted that the P.S.N.I. are responsible for enforcing offences under the Wildlife Order, not NIEA. If an offence is suspected, call 101. If a contractor retains all the plant material within the bounds of a development site, they are not committing an offence under the Wildlife Order.

In addition The Waste and Contaminated Land (Northern Ireland) Order 1997 (as amended) is also relevant as it places a duty of care on 'anyone who produces, collects, carries, keeps, treats or disposes of controlled waste to take all the necessary steps to keep it safe and to prevent it from causing harm, especially to the environment or to human health'.

Policy

As some invasive alien species can impact on amenity and natural heritage, they can become a material consideration when determining a planning application. Planning Policy Statement 2, Natural Heritage (NH1, NH3, or NH5) and the Single Planning Policy Statement apply to cases where a development proposal could cause the spread of a species and harm on features of a designated site or priority habitat.

Survey requirements

Appendix 1 provides an identification guide to the three most common invasive alien species which are an issue for development proposals. If these are found on site, or objectors have highlighted their presence, a survey and mitigation plan should be requested to ensure a complete application. This would also apply to any other species listed on Table 1.

The main survey period for most invasive plant species is from April to September as many are not visible in the winter.

Issues in relation to invasive alien species

Due to the nature of development, there can be significant ground disturbance and movement of soils on a site. This provides an opportunity for any invasive alien species in the seed bank to germinate or grow from root fragments. In addition any movement of these soils off site would spread the species to new sites.

Japanese Knotweed and Giant Hogweed are among the most troublesome in relation to development proposals due to their effects on buildings and people, in addition to their impacts on biodiversity. Japanese Knotweed can seriously impact on houses, buildings and infrastructure by growing through concrete and tarmac but only where a structural weakness already exists. It also forms dense thickets which shade out other species and create areas of erosion when it occurs along river banks. Giant Hogweed has significant health and safety issues. Giant Hogweed stems, edges and undersides of leaves bear small hairs, containing phototoxic sap, which can cause painful blistering and severe skin irritation when exposed to sunlight.

Himalayan Balsam, Cherry Laurel and Rhododendron are also a widespread problem for priority habitats. These species can spread rapidly through habitats, form dense thickets which can out-compete native plants and cause problems with soil erosion.

Mitigation

Where any species in Table 1 occurs on site, a mitigation plan should be developed during the planning application to ensure there is no spread of an invasive alien species.

As each species has a different life cycle, including different methods of propagation, different management methods are required. Available best practice guidance should be considered when dealing with plans.

Where disposal off the site is considered necessary, it should be acknowledged that a waste licence will be required. Also that covered licensed vehicles must be used with Waste Transfer Notes in place to move knotweed or giant hogweed material (controlled waste).

Sources of information

A field guide on how to recognise invasive species can be found at :

<https://www.daera-ni.gov.uk/publications/field-guide-invasive-species-ireland> (PDF, 4.33MB)

For Best Practice Guidance on specific species see:

<http://invasivespeciesireland.com/toolkit/>

For Japanese Knotweed see:

Environment Agency, Managing Japanese Knotweed on Development sites:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296930/LIT_2695_df1209.pdf (PDF, 5.98MB).

Please note that the legislative advice in this document is not relevant to Northern Ireland, all Acts/Regulations mentioned relate only to England and Wales and is no longer used by DEFRA.

The Property Care Association have produced the most up to date guidelines for on - site management of Japanese knotweed: <http://www.property-care.org/wp-content/uploads/2014/12/Code-of-Practice-for-the-Management-of-Japanese-knotweed.pdf>

Informative for decision notices

The following informative should be placed on the decision notice of every application where a species from Table 1 has been found on site:

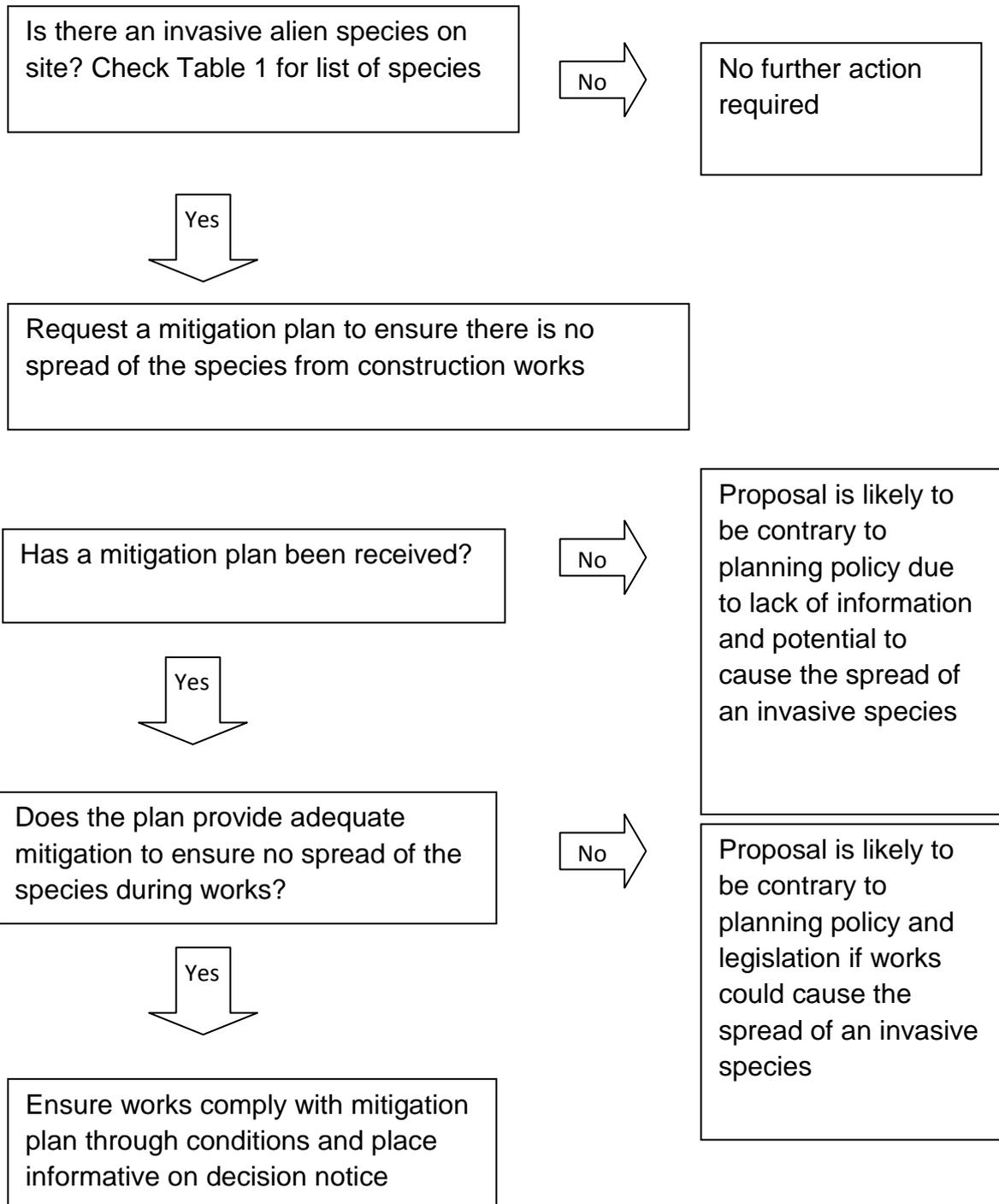
*The applicant's attention is drawn to Article 15 of the Wildlife (Northern Ireland) Order 1985 (as amended) under which it is an offence for any person to plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9 of the Order, which includes (*insert species here*). This highly invasive plant species has been recorded on site and control measures must be taken to ensure that any works do not cause it to spread either on or off the site.*

*Any soil, containing (*insert species here*) plant or seed material, which is removed off site, is classified as controlled waste under the Waste and Contaminated Land (Northern Ireland) Order 1997 (as amended). This legislation also places a duty of care on 'anyone who produces, collects, carries, keeps, treats or disposes of controlled waste to take the necessary steps to keep it safe and to prevent it from causing harm, especially to the environment or to human health'. In the case of (*insert species here*) it is the duty of the waste producer to inform the licensed waste carrier and licensed landfill site that the controlled waste material contains (*insert species here*) as part of the waste transfer process.*

Table 1
Schedule 9 PART II

Common Name	Scientific Name
Balsam, Himalayan	<i>Impatiens glandulifera.</i>
Bluebell, Spanish	<i>Hyacinthoides hispanica</i>
Cabbage, Skunk	<i>Lysichiton americanum</i>
Eelgrass, Dwarf	<i>Zostera japonica</i>
Fanwort	<i>Cabomba caroliniana</i>
Fig, Hottentot	<i>Carpobrotus edulis</i>
Hogweed, Giant	<i>Heracleum mantegazzianum</i>
Honeysuckle, Japanese	<i>Lonicera japonica</i>
Kelp, Giant	<i>Macrocystis pyrifera</i>
Kelp, Japanese	<i>Undaria pinnatifida</i>
Knotweed, Giant	<i>Fallopia sachalinensis</i>
Knotweed, Himalayan	<i>Polygonum wallichii</i>
Knotweed, Japanese	<i>Fallopia japonica</i>
Leek, Few-flowered	<i>Allium paradoxum</i>
Mile-A-Minute Weed	<i>Polygonum perfoliatum</i>
Parrot's Feather	<i>Myriophyllum aquaticum</i>
Pennywort, Floating	<i>Hydrocotyle ranunculoides</i>
Pirri-pirri Bur	<i>Acaena</i> (all species)
Reed, Giant	<i>Arundo donax</i>
Rhubarb, Giant	<i>Gunnera tinctoria</i>
Salmonberry	<i>Rubus spectabilis</i>
Salvinia, Giant	<i>Salvinia molesta</i>
Seaweed, Japanese	<i>Sargassum muticum</i>
Sea-buckthorn	<i>Hippophae rhamnoides</i>
Spartina or Cord-grass	<i>Spartina</i> (all species)
Stonecrop, Australian swamp	<i>Crassula helmsii</i>
Water Chestnut	<i>Trapa natans</i>
Water Fern	<i>Azolla filiculoides</i>
Water Lettuce	<i>Pistia stratiotes</i>
Water Primrose	<i>Ludwigia</i>
Water Soldier	<i>Stratiotes aloides</i>
Waterlily, Fringed	<i>Nymphoides peltata</i>
Waterweeds (all species)	<i>Elodea</i> (all species)
Waterweed, Curly	<i>Lagarosiphon major</i>
Waterweed, Large flowered	<i>Egeria densa</i>

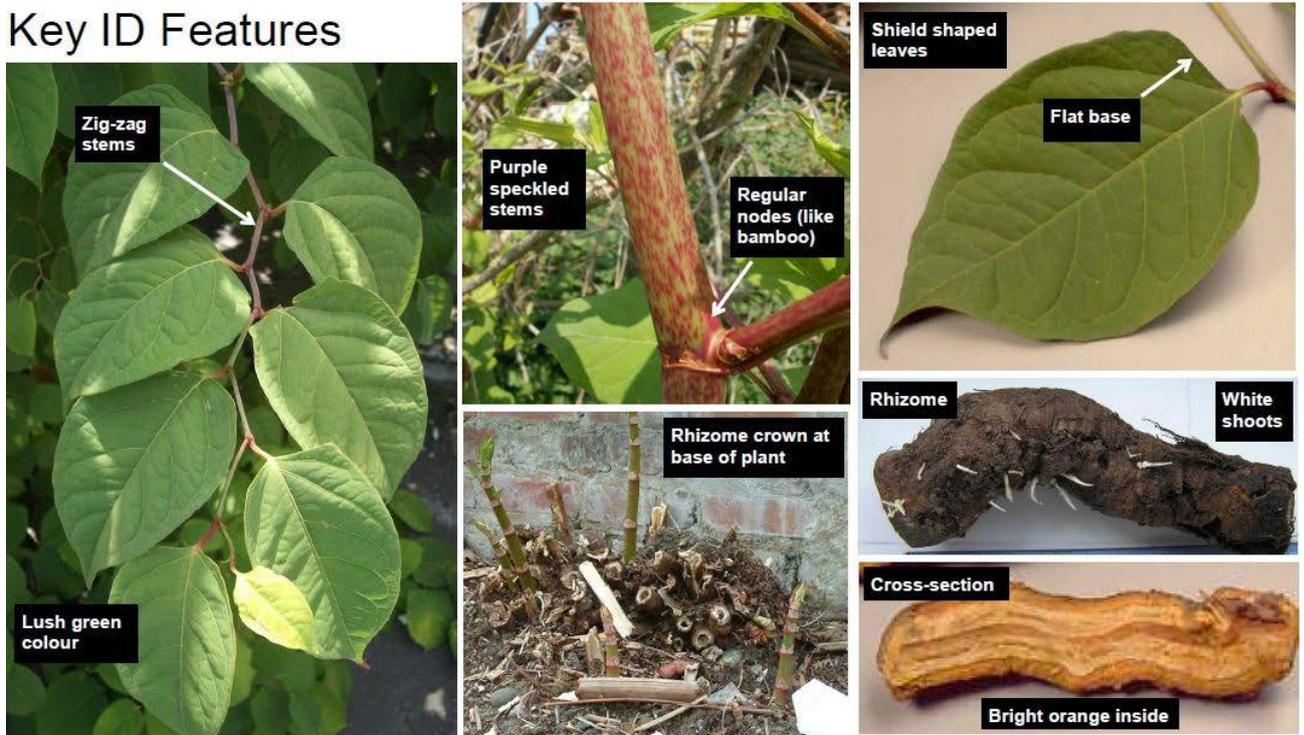
Process to consider when dealing with invasive alien species within a planning application



Appendix 1 -Details of the most common Invasive Species related to development proposals.

Japanese Knotweed

Key ID Features



Courtesy of GBNNSS

- I. Japanese knotweed (*Fallopia japonica*) is a non-native invasive perennial (plant that lives more than one year) species in Ireland. Since it was introduced as an ornamental plant in the 19th Century from Japan it has spread across the UK and Ireland, particularly along water courses, transport routes and infested waste area
- II. The success of the species has been partially attributed to its tolerance of a very wide range of soil types, pH and salinity. Its rhizomes can survive temperatures of -35 °C (-31 °F) and can extend 7 meters (23 ft) horizontally from the parent plant and 3 meters (9.8 ft) deep, making removal by excavation extremely difficult
- III. It grows in dense thickets; leaves are ovate or spade-shaped with a straight base with an acute point with hollow mottled stems. Leaves are arranged in a zig – zag formation (see above left)



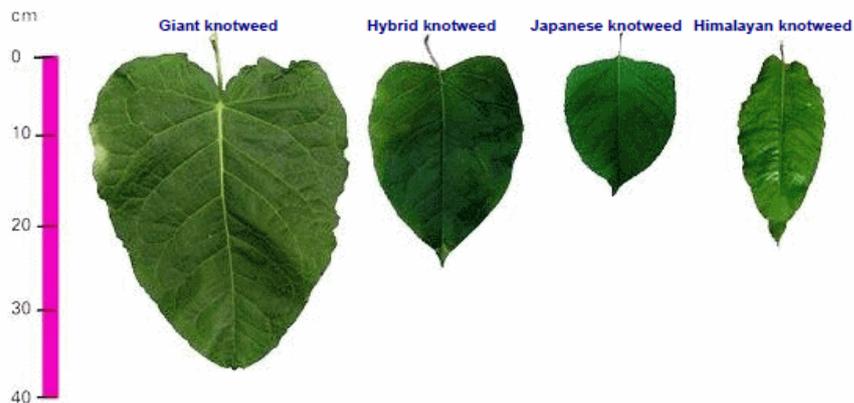
Courtesy of GBNNSS

- IV. Flowering occurs in late summer and they are white or cream arranged in loose clusters (see bottom of previous page right)
- V. The underground rhizomes are thick and woody with a knotty appearance and white root hairs exposed (next page right), when broken reveal a bright orange-coloured centre (next page left).



Courtesy of GBNNS

- VI. During the winter the leaves die back and reveal orange/brown woody erect stems. Only female Japanese knotweed plants have been recorded to date in Ireland and although seeds are produced, they are hybrids and rarely survive. The main cause of spread is through the deliberate or accidental movement of the rhizome fragments or nodes from the cut stems
- VII. Japanese knotweed is also known to reduce soil stability on river banks, especially when it dies back in the winter leaving woody 'bamboo' like stems (below right)
- VIII. Japanese knotweed is the most common of the knotweeds, but there are others similar (see below left)



- IX. In spring the underground rhizome sends up new shoots (see below right) and quickly starts to grow to full size. It can grow 10cm in one day.
- X. It is resilient to cutting, vigorously re-sprouting from any fragments which may be dispersed thriving on being disturbed



Giant Hogweed

Key ID Features



Courtesy of GBNNSS

- I. Giant hogweed (*Heracleum mantegazzianum*) is a tall (usually 3 – 5m), biennial or perennial herbaceous plant with several hundred small white flowers in large umbrella-like flower heads up to 500mm across
- II. Stems are green with dark-red or purple blotches and are hollow; they can be up to 100mm in diameter
- III. Leaves are dark green in colour and grow in a rosette formation - they are jagged in appearance and spiky at the ends, lower leaves can be up to 1.5m long
- IV. Giant hogweed looks like very large cow parsley, with a pale, swollen rootstock
- V. A plant can produce 20-50,000 viable seeds a year, which are penny sized and paper thin - but some plants have been reported to produce over 100,000 seeds. Each flower head produces thousands of seeds (approx. 10mm x 7mm) that are easily dispersed by water- therefore the seeds can be dispersed rapidly along watercourses
- VI. Seeds are dispersed over short distances by wind but considerably longer distances by rivers and streams
- VII. The seeds, which readily germinate, can also be transported in soil adhering to shoes, machinery and other contaminated objects.
The main thing to note is that **seeds can remain viable for up to 15 years after their initial dispersal** although most will become unviable after just 2 years

- VIII. Once a plant has produced seed, it should be assumed that the seeds will be present in the surrounding area for at least this length of time
- IX. Since the dispersal of giant hogweed is almost entirely by seeds it is very **important to prevent the plant from flowering and setting seed**
- X. Some species are sometimes confused with giant hogweed due to their similar flowering head; e.g. wild carrot, fool's watercress, cow parsley, hedge parsley, pignut, sweet cicely, hogweed, wild angelica, alexander's, sweet cicely, water hemlock, wild parsnip, fennel and hemlock
- XI. The plants very large leaves results in it shading out less vigorous native plants in its immediate vicinity, which results in a decrease in the biodiversity of the surrounding area
- XII. As a consequence of out-competing native riverside plants, river banks can be left bare in the winter and susceptible to erosion during spates and floods
- XIII. Before work commences, ensure all operatives are aware of the **Important Health and Safety Issues;**
- Anyone cutting or liable to come into contact with, giant hogweed should wear adequate personal protective equipment and be aware of all emergency procedures to follow should contact with the plant occur
 - Stems, edges and undersides of the leaves, bear small hairs containing phototoxic sap, if they come into contact with the skin, they can cause a very severe skin reaction (see below)
 - The slightest contact with human skin can cause painful blistering and severe skin irritation when exposed to sunlight (see image below right)
 - Blistering can take 24- 48 hours to appear after exposure, and dense pigmentation is visible after 3 – 5 days
 - The reaction can recur for 6 years or more, every time the damaged skin is exposed to strong sunlight
 - If staff are working with giant hogweed, it is advisable to apply liberal amounts of sun block to any exposed skin, this will afford some protection, as the worst reaction is a combination of ultra violet light and the sap from the plant
 - If you do come into accidental contact with giant hogweed cover the affected area of skin immediately from sunlight - then wash the skin with cold water as soon as possible



- If contact is with the eyes or blisters occur seek immediate medical advice
- It is worth noting that un-shaded habitats with high soil nitrate levels tend to produce greater quantities of phototoxic sap in the plant

Himalayan Balsam

Key ID Features



Courtesy of GBNNSS

- I. Himalayan balsam (*Impatiens glandulifera*) is an invasive terrestrial plant species that was first introduced in 1839 as an ornamental garden plant
- II. Since it was introduced, it has spread to most parts of Northern Ireland and Ireland
- III. In its home range, the Himalayas, it has adapted to develop thousands of seeds due to the nutrient poor soil and cold temperatures (2,500 to 3,000)
- IV. Unfortunately due to our warmer climate and nutrient rich soils it has thrived here and became highly invasive
- V. Himalayan balsam has the potential to dominate waterside vegetation and damp ground across Ireland, at the expense of native species, if not controlled
- VI. The species is particularly frequent in damp soil areas such as along the banks of watercourses, where it often forms continuous stands. It can also establish in damp woodland, flushes and mires
- VII. The seeds float, making watercourses a prime route for dispersal of the species. Seeds can also begin to germinate in water on their way to new sites

- VIII. It is the tallest annual plant (completes its life cycle in one year) in Ireland and due to its rapid growth, it shades out most of our native species, leaving banks bare in the winter time
- IX. Individual plants reach 2 – 3 m have translucent fleshy stems, pink-purple slipper-shaped flowers and large oval pointed leaves with obvious teeth around their edges (see images above)
- X. Each tooth carries a small globular ‘gland’ and produces large numbers of flowers which are followed by ‘seed pods’ about 25mm long
- XI. When mature and dry, the fruits split open explosively if touched, flinging the seeds over 6 m away from the parent plant, thus helping the species to quickly spread to new sites
- XII. Himalayan balsam is known to reduce native plant diversity by approximately two thirds, according to some figures
- XIII. There appears to be no direct detrimental impact on animal life, however, recent research suggests it competes for pollinators such as bumblebees with the native riverbank species, and so reduces pollination of other plants
- XIV. The risk assessment carried out by Invasive Species Ireland identified Himalayan balsam as one of the highest risk non-native invasive species in Ireland. This is largely due to its impact on native waterside vegetation within designated sites. Since the species is rapidly expanding its range, a major concern is that Himalayan balsam will dominate waterside vegetation and damp ground across Ireland, at the expense of native species
- XV. In the autumn, the plants die back, leaving the banks bare of vegetation and vulnerable to erosion, leading to knock on effects such as the increased siltation of fish spawning grounds as well as bank instability and therefore increased flood risk



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through environment and heritage
excellence**

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