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**Invasive Non-Native Species (INNS)**

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# 1 Purpose

This document provides information and guidance on consideration of Invasive Non-Native Species (INNS) when carrying out activities which are subject to authorisation by SEPA under the Environmental Authorisations (Scotland) Regulations 2018, (EASR).

# 2 Introduction

## 2.1 What are INNS

Non-Native Species (NNS) are any animal or plant introduced (deliberately or accidentally) by human activity to an area in which they do not naturally occur. Some animals and plants may have been transported here a long time ago and be considered “naturalised”, but these are still non-native species. Others are native to some parts of the UK but not to other parts (for example native to the mainland but not all islands).

There are over 2000 non-native species in Britain. Many contribute positively to our lives, as livestock, crops, timber, garden plants or pets. However, a small proportion (10 to15 percent) have the ability to spread rapidly and cause damage to the environment, economy, or human health. These are known as Invasive Non-Native Species (INNS), sometimes referred to as ‘invasive alien species’.

The Scottish Government recognises this threat and launched the [GB INNS Strategy](https://www.nonnativespecies.org/about/gb-strategy/)in partnership with Defra and the Welsh Government. INNS are also recognised in the [Scottish Biodiversity Strategy](https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/), with a dedicated INNS Plan being developed in 2025.

## 2.2 What are the issues with INNS

Examples of the negative effects caused by invasive non-native species include:

* Environmental impacts: biodiversity loss through disrupting habitats and ecosystems, preying on or out-competing native species, spreading disease.
* Social impacts: some species are a nuisance or cause risks to human health, for example Giant hogweed sap can cause human skin to burn when exposed to sunlight, and aquatic plants such as Floating pennywort can clog waterbodies, preventing access for navigation and angling.
* Economic impacts: the [cost of INNS in Britain](https://link.springer.com/article/10.1007/s10530-023-03107-2) was estimated in 2023 to be £4 billion per year (£499 million in Scotland). Much of this cost is borne by the agriculture and forestry sectors, but transport, construction, aquaculture, utilities and recreation are also affected.

Costs incurred because of invasive non-native species can include repairs to damaged structures and environment, delays to works, loss in value of a landholding or other assets, potential for prosecution because of damage caused by INNS or infringement of legislation. There is also a risk of loss of reputation through mismanagement of INNS.

## 2.3 Legislation and responsible authorities in Scotland

In Scotland the main legislation relating to the control of non-native species is the Wildlife and Countryside Act 1981. Under this legislation it is an offence to plant or cause to grow in the wild any non-native plant, or release, allow to escape or otherwise cause any non-native animal to be out-with its native range. Any criminal act relating to this legislation (e.g. illegal spread of NNS) should be reported to the prosecuting authority, Police Scotland, by dialling ‘101’.

The bodies with responsibilities for non-native species issues in Scotland are detailed in the Scottish Government’s [Code of Practice on non-native species:](http://www.gov.scot/Publications/2012/08/7367)

* NatureScot - All terrestrial and wetland habitats not listed below
* Scottish Forestry - Woodlands
* SEPA - Standing and running freshwater
* Marine Directorate - Marine environments

Under the Framework of Responsibilities contained in the Code of Practice on Non-Native Species made by the Scottish Ministers under Section 14C of the Wildlife and Countryside Act 1981, these habitat leads have a role in reducing the risk from pathways of introduction, transfer and spread in such waters through regulation and guidance.

# 3 INNS and EASR activities

It is important when carrying out any activity that consideration is given to the presence of all non-native species, but in particular INNS. All activities must avoid the spread of non-native species and employ suitable biosecurity measures.

## 3.1 Key considerations

Managing land inhabited by a non-native species, in a timely and appropriate way, can help avoid:

* Excessive development costs.
* Physical damage to buildings and hard surfaces.
* Harm to the environment.
* Reputational damage.
* Compensation claims.
* Prosecution.

Identifying non-native species on a site early lets developers assess and cost options for managing, disposal, or destruction and can reduce waste costs and improve how a site is managed.

## 3.2 Legal responsibilities when dealing with INNS

If you have non-native species on your premises, you have a responsibility to prevent them from spreading into the wild. Under the Wildlife and Countryside Act 1981 it is an offence to plant or otherwise cause to grow in the wild any non-native plant, or release or allow to escape any non-native animal.

If you are undertaking control of any non-native plants on land that you own or occupy, you must comply with specific legal responsibilities relating to:

* Spraying herbicides.
* Burning invasive plants.
* Burial of soil containing invasive plant material.
* [Disposing of invasive plants and contaminated soil off site.](http://www.netregs.org.uk/library_of_topics/land/knotweed__invasive_weeds/disposing_of__plants_off_site.aspx)

Further information can be found in [Section 4](#_4.1_Treatment_with).

When dealing with any non-native species, demonstrating that you have exercised due diligence, by adopting best practice and taking all reasonable steps to comply with the legislation is prudent. This involves:

* **Adopting a precautionary approach**

Don't release or plant until you have a clear understanding of the situation.

* **Carrying out risk assessments**

Due diligence is likely to include assessing the risk of an offence happening, establishing what to do to avoid it happening and acting according to best practice to prevent it happening.

* **Identification of non-native species, mitigation advice and following good management practices**

Photographs of many INNS species, advice on mitigation methods and ‘good practice’ guidance for many key species can be found at the [GB Non-Native Species Secretariat website](http://www.nonnativespecies.org)[.](http://www.nonnativespecies.org/) You should seek early advice from an expert or habitat lead organisation if you are unsure about any issues relating to the identification, management, release or planting of any non-native plant or animal.

## 3.3 Avoiding the introduction, movement and spread of INNS on and off site

It is important that biosecurity measures are employed on all sites as in many cases it is unknown if NNS are present, so biosecurity is the foremost (and most cost effective) preventative approach.

### 3.3.1 Pre-construction

* Ensure detailed checks and risk assessments are carried out for non-native species within initial site feasibility assessments and surveys.
* Where any non-native species is present, ensure you understand the risks and implications of managing it, as well as your legal requirements. Seek advice early.
* Where a non-native species is identified as a risk of being introduced, spread within, or moved off site, ensure biosecurity measures are considered at the early planning stage, and ensure enough time is given to implement them.
* Consider phasing the development to allow time to deal with the presence and/or risk of spread of non-native species.
* Ensure non-native species locations are incorporated within all relevant site method statements, including the site Ecological Protection Plan and Species Protection Plans, where appropriate.
* Where a species requires long-term management (e.g. [Japanese knotweed)](http://www.netregs.org.uk/library_of_topics/land/knotweed__invasive_weeds.aspx), ensure a site management plan is put together that addresses all issues associated with it.
* Nominate a designated Clerk of Works to manage the issue of non-native species on your site from an early stage.

### 3.3.2 On-site

It is important to consider potential pathways of non-native species introductions onto your site from elsewhere, or spread off your site, and for biosecurity procedures to be put in place to prevent this, even if your site does not currently have any non-native species.

If an INNS is known to be present on your site, you should brief all contractors fully, and ensure all staff are aware of what the species looks like and the issues associated with it. This could be done through ‘toolbox’ talks or within site introductions. Everybody working on site must understand the role and authority of the Clerk of Works managing the issue of the non-native species.

You should record any areas that are contaminated/infested with non-native species within your management plan, isolate them with fencing and put up restricted access signs.

#### Equipment / machinery

Where non-native species are known to be within or close to your site, you should take care not to facilitate the transportation of plant seeds or fragments, animals or eggs on machinery, vehicles or by foot. This may require the need for an exclusion zone and/or the use of designated machinery/ equipment on affected sites to prevent movement from one site or river catchment to another.

For all sites, you should inspect vehicles before moving them off site and provide wash facilities suitable for the machinery you have, if needed (e.g. a drive through bath or footbaths). You should pay particular attention to caterpillar tracks and where trucks and dumpers are stowed.

To maintain good site hygiene when dealing with any non-native species:

* A fence that can be clearly seen should mark out the area affected. Signs should be erected to warn people working there that the area is infested / contaminated.
* Where contaminated soil, materials or water are located, signage should be erected to indicate them.
* Personnel working on or between sites should ensure their clothing and footwear are cleaned where appropriate to prevent spread.
* Tracked vehicles should not be used within the area of infestation.
* All vehicles leaving the infested area and / or transporting infested soil/materials must be thoroughly pressure-washed in a designated wash-down area before being used for other work.
* Where cross-contamination is possible (i.e. from one site to another), consider designating vehicles or machinery to specific sites where possible to prevent spread.
* Material / water left after vehicles have been pressure-washed must be contained, collected and disposed of appropriately.
* All chemicals used for the control of non-native species should be stored and used in a responsible manner.
* All wash facilities including waste water from washing vehicles, equipment or personnel should be managed in a responsible way so as not to not cause harm to the environment.

#### Use of water and/or crossing of water

If using water on your site for construction purposes or to wash vehicles or equipment, you should ensure that the source of that water will not inadvertently act as a vector for the transportation of non-native species to/from your site or elsewhere.

If you abstract or store any surface or ground water on your site for any reason you must gain appropriate authorisation from SEPA. Disposal of contaminated wash water, including all silt and other solids (e.g. plant fragments), must also be dealt with in a responsible manner to avoid pollution and to [prevent the spread of any non-native species](https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm_source=website&utm_medium=social&utm_campaign=GPP527112017) that may be present.

Any pumps and associated pipework used should be:

* Emptied, thoroughly cleaned using a disinfectant approved for aquatic use, rinsed thoroughly (without allowing the cleaning water to enter the main drainage system), and if possible dried before it is taken to a site. This process should be repeated before the equipment is moved offsite.
* Positioned to avoid placing the inlet pipe amongst water plants.
* Positioned with the inlet just below the water’s surface, rather than on the bed of the water body.

4 Disposal of invasive non-native plants and associated soils

This section provides guidance on the disposal of invasive non-native plants and the soils they are growing in. This includes terrestrial plants such as Japanese knotweed, Giant hogweed, Himalayan balsam, aquatic species such as New Zealand pygmyweed, and other [high impact invasive non-native species](https://www.wfduk.org/resources/alien-species-classification-according-to-level-of-impact).

If you cannot treat or dispose of an invasive non-native species on the site where it is growing, you must send it to an authorised landfill or incineration facility.

## 4.1 Treatment with herbicides

Spraying foliage or injecting the stems with [approved herbicides](https://secure.pesticides.gov.uk/pestreg/) can be an effective treatment to stop invasive plants from spreading. When using chemicals, you may need to be authorised if the plants are in or [near water](https://www.sepa.org.uk/media/532108/wat-sg-18.pdf).

No waste management authorisation is required for on-site treatment with herbicides or for screening soils to remove fragments of invasive non-native plants.

Japanese knotweed usually takes at least 3 years to treat with herbicide. Knotweed rhizome can remain dormant in the soil for many years and will regrow if disturbed or if the soil is relocated. [Good practice for Japanese knotweed management](https://www.nonnativespecies.org/assets/Good_Practice_Management_-_Japanese_knotweed.pdf) should be followed.

Giant hogweed takes at least 2 years to treat, to ensure any seeds in the soil are no longer able to germinate. [Good practice for Giant Hogweed management](https://www.nonnativespecies.org/assets/Good_Practice_Management_-_Giant_hogweed.pdf) should be followed.

Himalayan balsam takes at least 3 years to treat, to ensure any seeds in the soil are no longer able to germinate. [Good practice for Himalayan Balsam management](https://www.nonnativespecies.org/assets/Good_Practice_Management_-_Himalayan_balsam.pdf) should be followed.

## 4.2 Burning

You can [cut and burn](https://www.netregs.org.uk/environmental-topics/land/japanese-knotweed-giant-hogweed-and-other-invasive-weeds/cutting-and-burning-invasive-plants/) non-native plants at the site where they are growing. SEPA will not require an authorisation for such burning but may take action if it results in harm or nuisance.

You must bury the ash and any remaining plant material on-site or take it for disposal at an authorised landfill site.

## 4.3 Burying non-native plant material that is not Japanese knotweed

SEPA will not require an authorisation for burying non-native plant material provided you:

* Only bury material with a biosecurity risk to the environment that requires its disposal on the site where it is growing.
* Bury the material in an area that is likely to be undisturbed and more than 7 metres away from an adjacent landowner’s site.
* Bury soils containing seeds, rhizomes, corms or fragments of plant that could regrow at a minimum depth of 2 metres on the site they were growing.

## 4.4 Burying Japanese knotweed

* SEPA will not require an authorisation for [burying Japanese knotweed](https://www.netregs.org.uk/environmental-topics/land/japanese-knotweed-giant-hogweed-and-other-invasive-weeds/cutting-and-burning-invasive-plants/) material provided you:
* Only bury Japanese knotweed plant material, the ash from burning it and any soils potentially containing Japanese knotweed at the site where it was growing.
* Bury the material in an area that is likely to be undisturbed and more than 7 metres away from an adjacent landowner’s site.
* Bury it at a depth of at least:
	+ 5 metres if you have not sealed it with a geotextile membrane.
	+ 2 metres if you have sealed it with a geotextile membrane.
* Use geotextile membrane that is:
	+ Undamaged.
	+ Large enough to minimise the need to join and seal it.
	+ Sealed securely.
	+ Able to remain intact for at least 50 years.
	+ UV resistant.

## 4.5 Composting aquatic non-native plants

Aquatic plants which grow underwater, such as New Zealand pygmyweed, can be composted on site, provided that it is:

* Not composted in close proximity of any watercourses, ditches, ponds or lochs, and
* Contained so that no plant fragments can spread back into any waters.

Once fully composted, the resulting material can be used on-site to spread on land or as mulch for planting schemes.

If they cannot be composted on site, they can be composted at an external composting facility.

You should check with the waste site in advance to make sure it’s got a permit to accept material containing invasive plants. The waste site may also need time to prepare.

Use a [registered waste carrier](https://environment.data.gov.uk/public-register/view/search-waste-carriers-brokers) and an authorised landfill site or suitable disposal site. Cover or enclose it in the vehicle so that no waste can escape during the journey.

## 4.6 Reusing sieved or screened soil on sites with Japanese knotweed

You can reduce the quantity of Japanese knotweed in soil by screening or sieving it, but this is unlikely to remove all propagules (a piece of material that can develop into a new plant).

You must:

* Only reuse screened or sieved soils at the site where the Japanese knotweed was growing.
* Only reuse soils in a restricted area of the site, not across all of it.
* Remove any unused screened or sieved soils for disposal to a landfill that has the correct type of permit.

You must not reuse screened or sieved soils from sites with Japanese knotweed:

* At any site other than at the site where it was produced.
* Within 50 metres of watercourses, ditches or protected areas.
* On boundaries with neighbouring properties.
* On existing amenity areas, lawns and gardens.
* In places that may be used by people or livestock.

## 4.7 Off-Site Disposal of Japanese Knotweed

If you cannot dispose of Japanese knotweed suitably on site, you must send it to an authorised landfill site or incineration facility.

You must not:

* Dispose of Japanese knotweed with other surplus soil.
* Sell soil contaminated with Japanese knotweed as topsoil.

You can only reuse soils contaminated with knotweed on the site where they were growing.

SEPA will not authorise the use of Japanese knotweed material or soil which has contained Japanese knotweed on another site.

You should check with the waste site in advance to make sure it’s got a permit to accept material containing invasive plants. The waste site may also need time to prepare.

Use a registered waste carrier and an authorised landfill site or suitable disposal site. Cover or enclose it in the vehicle so that no waste can escape during the journey.

## 4.7.1 Landfilling Japanese Knotweed

Landfill operators dealing with material contaminated with Japanese knotweed must ensure that they are authorised to receive it, and that they have sufficient capacity to ensure the material can be dealt with in accordance with the following:

* Burial to a depth of at least 5 metres (immediately covered to 1 to 2 metres, final depth after 2 to 4 weeks).
* Burial at least 7 metres from the margins of the site or any engineering features, e.g. drains or bunds within the site.
* Burial at least 5 metres above the base or liner of the landfill.

# 5 Water transfers

This section gives SEPA’s position on new transfers of raw water between catchments. Prevention of pathways that may allow the introduction and spread of INNS, is a key factor not simply the existing presence or absence of INNS.

## 5.1 Unconnected catchments

Any new raw water transfer that connects otherwise hydrologically isolated catchments will be required to have mitigation in place to prevent the spread of INNS through the transfer. The mitigation will need to be fail safe and completely effective in the prevention of spread of all life stages of INNS (including eggs, larval stages, small fragments and microscopic organisms). Developers will need to present evidence that proposed mitigation meets these requirements.

## 5.2 Already connected catchments

For a new raw water transfer that creates a new connection between catchments/sub-catchments that are already hydrologically linked, the developer will need to undertake an assessment of the increase in risk of INNS transfer above that posed by existing pathways. Any mitigation requirements will then be decided on a case-by-case basis depending on the degree of risk increase.

## 5.3 Existing transfers

We will develop an approach for assessing the risks from existing cross-catchment transfers and then work with operators to identify the need for mitigation measures where appropriate.

## 5.4 Exceptions

The only exception to this position is for temporary emergency water transfers for the purpose of maintaining public water supply during times of drought. We will work with Scottish Water to assess mitigation requirements for these on a case-by-case basis.

# 6 Alteration of structures

This section gives SEPA’s regulatory position on alterations (modification and removal) to existing structures, including impoundments, within the water environment, in relation to INNS.

## 6.1 Risk of introduction, transfer and spread of INNS

The risk of the introduction, transfer and spread of INNS should be considered wherever there is a proposed removal of a structure (either partial breach or full removal) or modification, including the addition of fish passage.

SEPA will, in considering and authorising any alteration works to an existing structure under the Environmental Authorisations (Scotland) Regulations 2018, (EASR), have regard to potential pathways for INNS. SEPA will use existing data and risk mapping to provide an indication of those watercourses where there will be a risk of any structure removal or easement potentially opening new stretches for mobile species such as North American Signal Crayfish or non-native fish species. Where an alteration opens up the risk of cross catchment transfers this will also be a factor.

The type of barrier is highly relevant to the potential increased risk of introduction, transfer or spread of INNS. Most barriers to fish are unlikely to prevent the downstream spread of INNS, so the upstream spread is most likely to be relevant. Where an existing structure has certain features, it may also be acting as a barrier to upstream movement of mobile species such as signal crayfish. Therefore, where these features are present consideration should be given as to whether an alteration will open a pathway for INNS.

Features of structures that could deter or prevent upstream movement of mobile INNS include, but are not limited to:

* Large vertical height – less likely to be able to ascend high structures.
* Smooth vertical surface without features - no features to aid ascent.
* Overhang – can prevent ascent.
* Structure that extends beyond the bounds of the watered channel - there are no wetted areas around the sides of the barrier that could be used to circumvent the structure.

## 6.2 Principles for alteration of structures to ease barriers to fish migration and potential spread of INNS

Not all cases are clear cut and SEPA will consider on a case-by-case basis any alterations of structures which may result in spread or establishment of INNS. Examples of some likely scenarios are given below.

Where INNS are known to be established both upstream and downstream of an existing structure and it is unlikely that the removal or modification of the structure would significantly impact the spread of INNS, works may progress, subject to appropriate authorisation, without further consideration of INNS.

Where INNS are known to be either only upstream or only downstream of an existing structure, and alteration of the structure would likely open up a potential pathway for INNS to spread, for example where a structure currently prevents the downstream spread of non-native fish species, then SEPA will consider each on a case-by-case basis. In such cases progressing structure alteration may be unlikely due to significant risk of facilitating INNS spread.

Where action at an existing structure, which is known to be a barrier to fish migration, has not been progressed due to potential likelihood of INNS transfer or spread then this will be recorded. Should the issue of INNS be resolved at a future date, or if a new design approach or technological advance be made which allows native fish to pass upstream with the continued exclusion of INNS, or INNS spread occurs anyway, then this may allow a re-evaluation of the case.

# 7 Removal of Pink Salmon redds

This section explains how action can be taken to impede the spawning of Pink Salmon (*Oncorhynchus gorbuscha*, also known as Pacific or Humpbacked salmon) without impact on the environment.

Concern over the potential for non-native Pink Salmon to establish in Scotland has prompted action to disturb their spawning redds, either to collect eggs for research purposes, or to disrupt them in order to prevent egg survival. This activity has the potential to impact on the environment as it involves disturbing the river bed.

SEPA will not normally require an authorisation where individual pink salmon redds are removed provided good practice is followed. You do not need to contact SEPA if:

* Equipment used for redd removal and disruption is limited to hand tools only and does not involve the use of any powered machinery.
* Redd removal is not undertaken during sensitive periods for native fish species (from the time of spawning to the emergence of the juvenile fish). Redd removal should therefore generally not be carried out between 1 October and 31 May where Atlantic salmon and trout are present, with this exclusion period extended to 30 June where river and sea lamprey are present. For information on what fish are present, please consult with your local Fisheries Trust or District Salmon Fisheries Board (contact details available from [Fisheries Management Scotland](https://fms.scot/)[)](http://fms.scot/).
* [NatureScot](https://www.nature.scot/) is consulted and their advice followed where any protected areas or protected species, in particular freshwater pearl mussels or sea lamprey, may be affected.

SEPA should be contacted if you plan to use any approaches which do not follow the good practice above, as this may require an application for authorisation under the Environmental Authorisations (Scotland) Regulations 2018, (EASR) and will need a detailed method statement and justification for the works.

<Report date here (month, year)>

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