



**INLAND  
WATERWAYS**  
ASSOCIATION

# GUIDANCE NOTE

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*Environmental  
Considerations*



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First published as v.1 in 2022. This is a web-friendly document and will be reviewed and updated when the source legislation changes. Any printed version may not be the latest version and a check should be made on IWA website. IWA has interpreted the current legislation, as dated in the document, in good faith but the reader should check for themselves that it is the latest version and that they are acting within the legal framework.

## INTRODUCTION

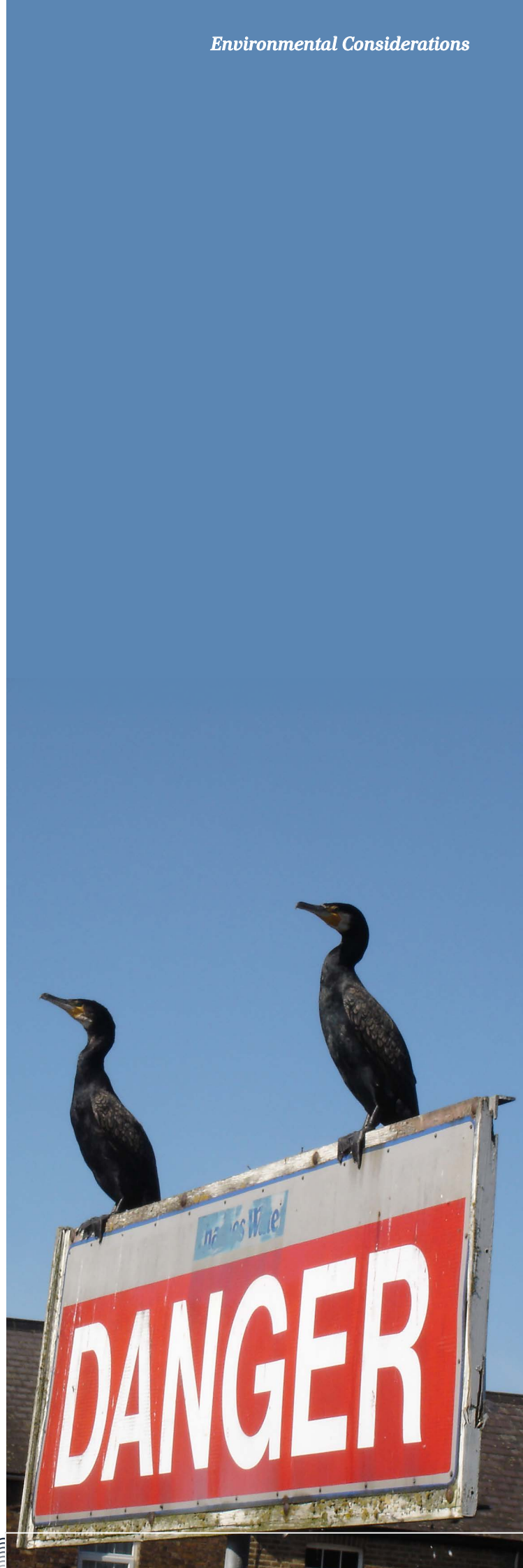
The waterways are often seen as beneficial to the environment, but some activities, including restoration, have the potential cause a negative impact, for instance by altering land use or releasing pollutants into a watercourse.

There has been a major push from governments, industry leaders and the public to become more sustainable and avoid damaging processes. The impacts from waterway restoration projects, if done without appropriate planning or thought, can cause massive damage to the environment, biodiversity and local community, while also risking the reputation of the individual organisation and the restoration movement as a whole.



**Responsible restoration groups should assess their impacts and understand what environmental considerations must be addressed before undertaking potentially damaging restoration activities.**

Organisations undertaking construction works are now required by law to undertake a baseline survey for many environmental areas including biodiversity, waste, water, pollutants and archaeology. As you read through this guidance note, remember each environmental consideration is likely to require some form of baseline survey before permissions for works are given the go ahead.





## ARCHAEOLOGY, HERITAGE & LANDSCAPE

Archaeology, heritage and landscape may not be as obvious aspects of environment as ecology and waste, but still need to be taken into account. The abandonment of a canal may have covered up or partially demolished an earlier canal structure. It is important to keep archaeology and heritage in mind throughout a project's lifecycle. The work being carried out should be in keeping with the landscape.

*There are number of positive reasons to ensure archaeology is protected such as:*

- 1 Ensuring your project meets legal requirements and to receive planning permission.
- 2 Protect important features connecting us to our past and opening up economic and social benefits for future generations.
- 3 Demonstrate the group's commitment to ensuring best practice principles are followed.

Archaeology, heritage and landscape should be taken into account during the planning stage.



Some canal structures that are exposed by your restoration may need to be removed for safety or engineering reasons. You may be required to survey and make a record of these structures. It may be necessary to take down a structure because it is unsafe and rebuild it as part of the restoration. Heritage restoration is covered in more detail in Book 3 of the Practical Restoration Handbook.



## **BIODIVERSITY**

The Environment Act 2019 introduces the concept of Biodiversity Net Gain (BNG) to ensure that new developments enhance biodiversity and deliver thriving natural spaces. BNG is an approach to development that leaves the natural environment in a measurably better state than it was initially. The outcome is a net gain in biodiversity.

BNG will ensure additional protection for habitats and biodiversity from damaging developments, enhancing the current management standards for meeting existing legislative requirements on biodiversity and the environment. Where traditionally developers would often seek to mitigate the loss of habitat due to their project by creating/adding/offsetting

other habitats, often in localities away from the ecological footprint of their project; BNG looks to ensure habitats are replaced on a like-for-like basis to avoid offsetting habitat loss of one type of habitat with another that does not have the same or better form, function or relation to biodiversity. An example would be replacing a river with a woodland. Developers now need to provide a minimum of 10% net gain to biodiversity for their project.

***BNG should be considered at all stages of the project and developers should adhere to the ten principles set out in the Biodiversity Net Gain: Good Practice Principles for Development (CIEEM, 2016). A link is provided in Useful Resources on p.13:***

<b>Apply the mitigation hierarchy.</b>	Avoid or minimise the impacts on biodiversity and only compensate where these cannot be achieved.
<b>Impacts on irreplaceable biodiversity.</b>	Avoid losing biodiversity that cannot be offset by gains elsewhere e.g. Sites of Special Scientific Interest (SSSI).
<b>Be inclusive and equitable.</b>	Engage stakeholders early and include them throughout the project lifecycle.
<b>Address risks.</b>	Mitigate difficulty, uncertainty and other risks to achieve net gain, by incorporating contingencies.
<b>Make a measurable net gain contribution.</b>	Achieve an overall gain for biodiversity, ecosystem services and nature conservation priorities.
<b>Achieve best results for biodiversity.</b>	Use credible evidence and local knowledge to justify BNG choices over the project for best results.
<b>Be additional.</b>	Achieve nature conservation outcomes that demonstrably exceed existing obligations.
<b>Create a net gain legacy.</b>	Ensure your net gain is sustainable beyond the construction phase and is well managed into the future.
<b>Optimise sustainability.</b>	Prioritise BNG and where possible the wider environmental benefits for sustainable society and economy.
<b>Be transparent.</b>	Communicate all net gain activities in a timely and transparent manner with stakeholders.



## MITIGATION HIERARCHY

When assessing each aspect or undertaking any operation within the construction phase, the mitigation hierarchy should be applied. The mitigation hierarchy is the cornerstone of ensuring sustainability across the project and should be referred to at every stage.

*Actions should be taken in the following order:*



### Avoidance

The first step looks at ensuring measures are taken to avoid creating an impact from the outset. Examples can include diverting the original canal channel to avoid building into a protected site or altering the timing of works to avoid the bird nesting season. This is often the cheapest and most efficient method of reducing the impacts.



### Minimise

The second step involves assessing methods to reduce the duration, intensity and extent of the impact, where avoidance is not possible. Examples can include reducing noise nuisance, through using new generators and machines with reduced decibels during operations or dredging the canal channel in sections as opposed to in one pass.



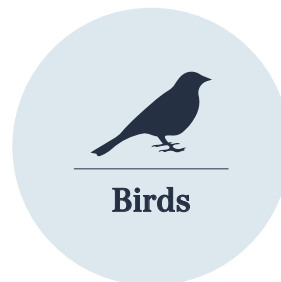
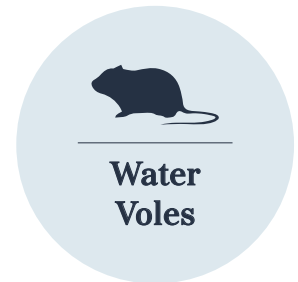
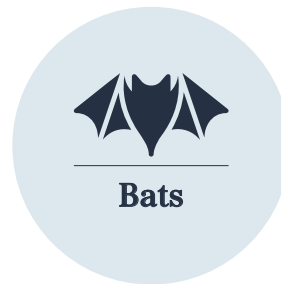
### Compensate

Where avoidance and mitigation cannot be achieved, compensation refers to offsetting the remaining impacts through rehabilitation, restoring or providing enhancements. For example building a new badger sett where one was lost or installing bat bricks into a restored bridge.

## PROTECTED SPECIES

Certain species are listed to Schedule 5 on the **Wildlife and Countryside Act (1981)**. This means that it is an *“offence to intentionally kill, injure, take, possess or trade in any wild animal listed on schedule 5 and to interfere with places used for shelter or protection, or intentionally disturb animals using such places”* unless under specified circumstances. The maximum fine on conviction is currently £5,000.

*Protected species include:*



You should record the presence of protected species on a national database. This can be done by contacting the local Statutory Nature Conservation Organisation (SNCO). A link can be found in Useful resources on p.13. You should also alert the appropriate land owner, council and/or management body to the presence and location of these species. The presence of protected species on your restoration site will require you to take some mitigating action.



# INVASIVE SPECIES

Non-native species are plants and animals that do not naturally occur in an environment but have been introduced to that environment either accidentally or deliberately. Not all non-native species are detrimental to the environment they are introduced into. Those that do have a negative effect on the environment are known as invasive non-native species. These invasive species are a widely recognised problem because of the threat these different plants and animals can pose to the native environment, the economy and the public’s health.

*Invasive species likely to be encountered in a canal environment include:*



**Himalayan Balsam**



**Japanese Knotweed**



**Floating Pennywort**



**Signal Crayfish**



**Swamp Stonecrop**



**American Mink**



**Giant Hogweed**



**Blue-green Algae**

## MANAGING NON-NATIVE INVASIVE SPECIES (NNIS) ON RESTORATION SITES



**When looking to manage NNIS on your site, it is recommended to adopt the *precautionary principle* (assume the species is a NNIS and act accordingly until it is confirmed that NNIS is not present) and take practical steps to comply with legislation.**

- 1 Undertake an environmental risk assessment for the likelihood of spreading NNIS.
- 2 Identify the species of NNIS on site.
- 3 Ensure mitigation measures to avoid spreading NNIS are in place prior to starting any works.
- 4 Talk your volunteers through an NNIS toolbox talk on site and how to identify NNIS.
- 5 Seek advice from an appropriate person with relevant qualifications.

**ON SITE CONSIDERATIONS:**

- ① Ensure your volunteers are appropriately briefed on environmental issues on site and their role in managing them. This information can be included in the site induction.
- ② Consider day to day impacts of your restoration work - disturbance to wildlife from noise, vibrations or dust.
- ③ If you are removing vegetation (trees and shrubs) check for Tree Preservation Orders and do not carry out large scale clearance work between March and October (bird nesting period).
- ④ If you are excavating sections of canal be aware of the impact on the habitats of protected species such as water voles and badgers. Make sure mitigation methods have been carried out before work starts. Moving topsoil can also damage the local seed bank.
- ⑤ Dredging or dewatering can also damage wildlife habitats. If you are planning dredging work avoid fish spawning and bird nesting times. When dewatering a section of canal consider; where you are going to pump the water? Do you need a permit? Is the water polluted and therefore shouldn't enter a watercourse? Do you need to carry out a fish rescue?
- ⑥ Demolition or restoration of structures such as bridges can mean a loss of habitats for bats and other wildlife. Make sure surveys of the structure have been carried out before work starts. If a protected species is found, all works must stop and advice sought from an ecological professional.
- ⑦ Materials must be stored appropriately and away from sensitive areas or watercourses to prevent contamination. Set up designated cement/lime mixing and washing out areas to avoid contamination of groundwater and watercourses. If you have fuel on site then store it in appropriate containers to prevent leaks, use funnels for filling. Have spill kits readily available and train volunteers in how they are used. Large fuel tanks need to be provided with a bund capable of containing 110% of the maximum volume of the fuel stored.
- ⑧ Review processes and adapt if new ecological issues arise on site.





## HOUSEKEEPING & WELFARE

Good housekeeping on your restoration site is vital for promoting health and safety amongst volunteers and safeguarding the local environment. Good housekeeping in relation to environmental management can be achieved through simple measures including providing appropriate refuse and recycling facilities and ensuring hazardous materials are stored correctly and away from other hazards. Restoration sites are often visible to the public and incorporating some of these measures will also show the public that your restoration group is responsible.

***Acts as simple as the following will go a long way to ensure your restoration complies with environmental legislation:***

- 1 Bagging empty cement or lime bags straight away to avoid them being blown around site.
- 2 Storing lime and cement on a board and covering with tarpaulin to prevent spills.
- 3 Storing fuel containers securely.
- 4 Labelling waste areas and providing segregating skips/bins.
- 5 Having a spill kit on site and providing training on how to use it.

## MATERIAL STORAGE

Materials should be stored in a designated area in an orderly manner so that they can be retrieved when required. They should be stored to prevent damage either while in storage or when being handled. Unusable damaged material should be classified as waste and dealt with appropriately, see below. Surplus material may need to be returned or moved to a new location, which should be done safely and with care to avoid damage or contamination.

Improperly stored materials can pose a risk to the environment through contaminating soil, compacting tree roots or leaching into the water table or watercourse. Material should be stored away from sensitive receptors on site and situated where the most risk can be eliminated.

# NUISANCE

Where possible, carry out noisy or dusty operations away from neighbours and/or erect suitable screens. Nuisance can be from noise, dust, bonfire smoke, pump discharge water or lighting. Limit the times when work is being carried out, for instance, don't start the mixer at 08.00 on a Sunday morning. Have respect for your neighbours by arriving and leaving site in an orderly manner without making a lot of noise. Don't congregate on a public Right of Way and be considerate of other users.

Site operations away from neighbours and provide screens if it is practicable. Make sure the dust suppression on cutting equipment is in working order and is used.



Plan where your pump discharges the water; don't allow the water to flood or pollute your neighbour's property. Water pumped into the drainage system may need consent from the local water authority, who would want to make sure that silt is not being allowed to enter their system. If pumping into another watercourse make sure that silt is not discharged by allowing the discharge water to flow over vegetated ground allowing the silt to be filtered out before the water reaches the watercourse. Make sure pump discharge water is not contaminated with other pollutants, such as oil or fuel.

If you need to use lighting, make sure it only lights up the work area and not your neighbour's property and that it is only switched on when required for work to reduce light pollution.

Bonfires should only be used to burn natural materials, such as the arisings from scrub bashing. Do not burn waste material. Bonfires can cause a nuisance from smoke created during the burning process, which can blow towards people, houses or gardens. Before starting a fire, be aware of your local surroundings. You need to make the impact of your fire on the local surroundings as small as possible. In order to do this there are some factors to take into consideration.

***You must stay away from:***

- 1 Animals and their habitat.
- 2 Fences and hedgerows.
- 3 Power Lines.
- 4 Roads and railways (in case smoke obscures visibility).
- 5 Public rights of way.
- 6 Private property.



## REFUELLING PLANT & TOOLS

Refuelling is a task where the environmental dimensions and regulations are often not properly considered.

*A number of simple checks can ensure compliance in this area:*

- ① Make sure funnels are used and refuelling is carried out in a designated area away from areas that would be sensitive to pollution, such as close to watercourses.
- ② Refuelling small plant and tools should be carried out on a polythene sheet to prevent spills entering the ground.
- ③ Make sure the spill kit is available and that you know how to use it.
- ④ Small plant, such as generators, should be placed on a 'plant nappy' when in operation so that any leaks are collected.
- ⑤ If a hydraulic hose is found to be damaged, do not use the plant until it has been repaired or replaced.
- ⑥ Use biodegradable hydraulic oil in all plant.



# WASTE MANAGEMENT

The construction sector produces around 100 million tonnes of waste per annum (roughly a third of all waste within the UK). Governments in the UK and around the globe, are now pushing for a greener economy and are increasing pressure on the construction industry to reduce, reuse and recycle. Another issue causing serious concern for local authorities is the risk from contamination and the incorrect storage and handling of waste.

For more detailed information on waste management, refer to the guidance note on Waste Management.

## *Top tips for waste management on your site:*

- 1 Waste needs to be stored so as not to cause contamination. Ideally waste materials should be stored separately so the recyclable materials are not mixed with non-recyclable material.
- 2 Bag up empty cement and lime bags carefully so that dust is not generated. Collect litter and unused material at the end of each day and dispose of correctly.
- 3 Make clearing waste a priority. Check that everyone is aware of what is required and that it is being done.
- 4 Clear up unused concrete/mortar. Place it on a board or polythene sheet so that it can set and then be used as fill or disposed with other solid waste.

- 5 Arisings from cleaning of reused materials or during preparation work for repainting should be collected and not allowed to pollute land or watercourses.
- 6 Make sure that all flammable waste materials (such as packaging and timber offcuts) are cleared away regularly to reduce fire risks.
- 7 Waste materials need storing safely before their removal from the site so make sure that you allow sufficient space for waste skips and bins.

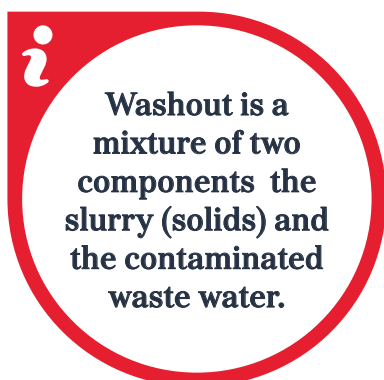




# WATER CONTAMINATION

## WASHOUT WATER

Washout is water that has been mixed with cement, lime or other mortars/materials. There are various ways to deal with this washout water depending on the site conditions.



*The following methods should be followed where a process creates washout:*

- 1 The slurry from the mixer should not be tipped directly onto natural ground where it could affect a watercourse.
- 2 The area where washout water is treated should be at minimum 10 metres away from drains, storm inlets, open watercourses and ditches.
- 3 The slurry should be collected and allowed to settle overnight where the solids will settle out and the clear (ish) water can be reused for washing out and the sediment disposed of by collecting it on a polythene sheet or strong polythene bag. Over time the sediment will set and can be used as fill material.

## USEFUL RESOURCES:

[National Biodiversity Network](#)

[GB Non-Native Species Secretariat](#)

[Biodiversity Net Gain; Good practice principles for development \(CIEEM, 2016\)](#)

Sign up to read the full Practical Restoration Handbook and supporting resources here: [waterways.org.uk/practicalrestorationhandbook](https://waterways.org.uk/practicalrestorationhandbook)



Historic England

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