Ecology and biodiversity

There is a global biodiversity crisis, and everyone must play their part in halting the decline.

Within the construction industry it is important to consider how activities can contribute to biodiversity loss for example through habitat destruction, fragmentation and species isolation.

This guidance note looks at:

- The importance of biodiversity
- Ecological surveys
- Environmental Impact Assessment (EIA)
- Design considerations
- Non-native species
- Protected species

Importance of biodiversity

Biodiversity is the variety of living organisms on Earth. It includes all animals, plants, fungi and micro-organisms, not just rare or threatened species. It also includes the habitats these organisms depend on.

Biodiversity is essential for the processes that support life on earth. It provides:

- **Resources** - like food, clean water, medicines and shelter
- **Resilience** - to flooding and can support Net Zero through carbon sequestration and emissions reduction

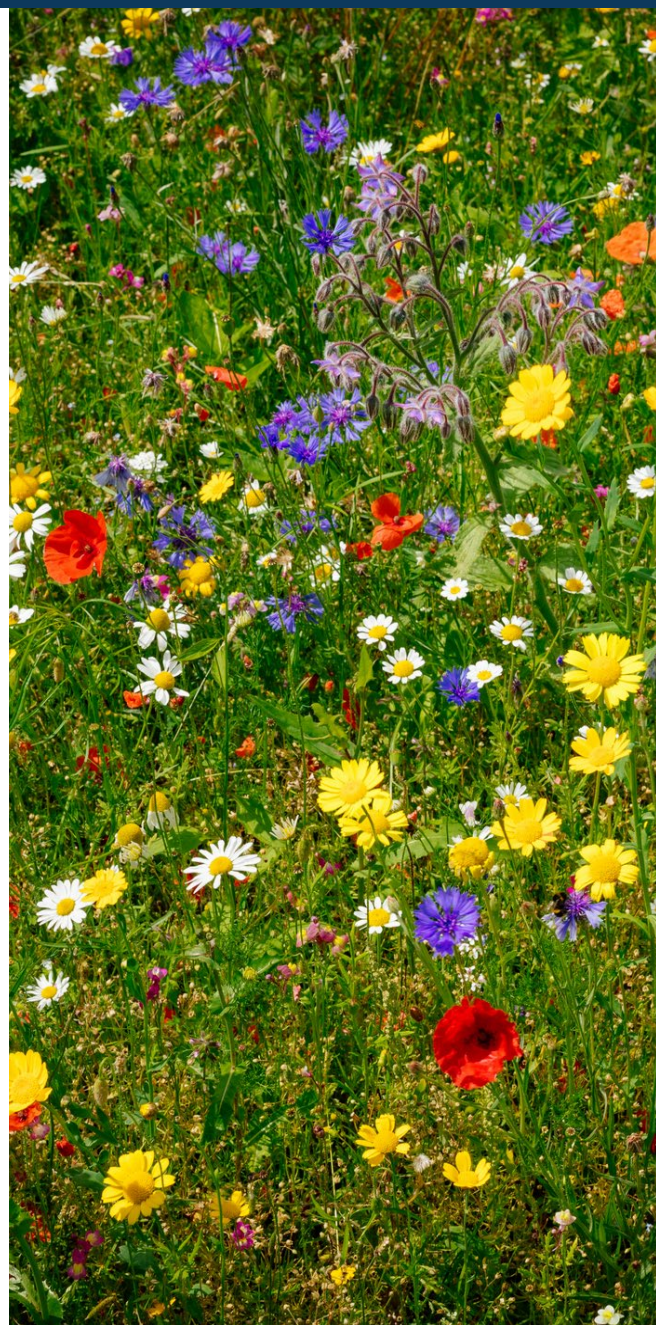
Consider the impacts on biodiversity early in the project

It is important to consider the impact your development has on biodiversity at the planning stage of the project.

Including ecologists and stakeholders early in the project is critical for:

- Mapping the species and habitats present on site
- Identifying the legal requirements for any protected species or habitats, or non-native species identified on site
- Identifying the correct measures that can be implemented to protect and enhance biodiversity

British Standard BS42020 - Contains guidance for those in the planning and development and land use sectors whose work might affect the conservation or enhancement of biodiversity - see further information and links on the back page.



Ecology and biodiversity

Ecological surveys

An ecological survey assesses the impact a development may have on a proposed site.

A survey will::

- Identify the ecological constraints early in the planning phase
- Minimise the impact on biodiversity and habitat disturbance
- Identify key species present, including protected species, Biodiversity Action Plan (BAP) species for conservation, and non-native species (NNS)

Ecological surveys and mitigation activities, like trapping animals, or controlling NNS, can only be carried out at specific times of the year. Plan these early at the pre-contract and contract stages.

Note: The unexpected discovery of a protected species, or a non-native species on site, once work has started may lead to delays, fines and damage to your reputation.

Environmental Impact Assessment (EIA)

EIA is a tool used to identify, predict and evaluate the environmental effects of a proposed project of activity. An EIA:

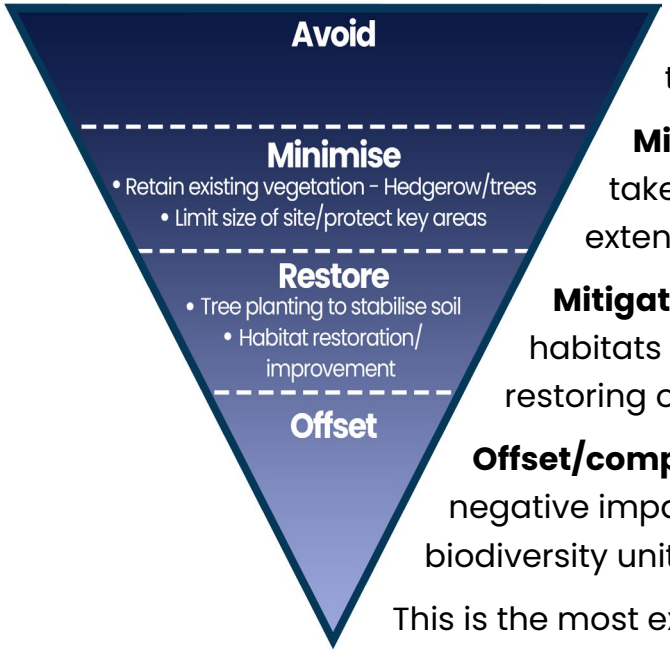
- Ensures construction projects are undertaken with an understanding of its impacts
- Includes the entire project life cycle, from planning and design to construction, operation and decommissioning
- Evaluates impacts including air, water, soil, biodiversity and human-health

Design considerations

Mitigation hierarchy

A mitigation hierarchy is a set of guidelines that developers can use to clearly define and establish how to improve the biodiversity value of the project.

The hierarchy gives top priority to avoiding negative biodiversity impacts, followed by minimising, restoring and finally offsetting impacts.



Avoid: Avoid or reduce biodiversity impacts through site selection and layout.

Minimise: If it is not possible to avoid, you must take measures to reduce the duration, intensity and extent of the impacts to biodiversity.

Mitigation/restoration: Protect and improve on site habitats and affected areas. This includes enhancing, restoring or regenerating biodiversity on-site.

Offset/compensate: Offsetting or compensating for any negative impacts by: creating off-site habitats; purchasing biodiversity units on the market; or statutory credits.

This is the most expensive, complex and high risk approach and should only be considered if all other options have been exhausted.

Ecology and biodiversity

What to look out for on site - general good practice

- Implementing species corridors on construction sites
- Minimise de-vegetation as far as possible
- Reporting and protecting protected species
- Collaborating with environmental organisations for guidance
- Mindful construction practices, such as using access mats to protect delicate soils
- Implementing drainage systems that recycle water to prevent contamination
- Regularly monitor the construction site for any signs of environmental impact
- Adjust construction practices based on monitoring results and take corrective actions as needed
- Implementing a biosecurity protocol for all vehicles and equipment to prevent introduction or spread of non-native species, pests and diseases

Company benefits

- Avoids financial and scheduling implications
- Prevents enforcement action, such as fines, and protects your reputation from damage

Non-native species (NNS)

Non-native species (NNS) live outside of their natural range. Some harm the environment, economy, or health and are called invasive non-native species (INNS). Efforts should be made to prevent their introduction or spread.

INNS may be plants or animals. Common INNS you may come across include:

- Japanese knotweed
- Himalayan balsam
- Giant hogweed
- Rhododendron
- American signal crayfish
- American skunk cabbage

Information on identifying NNS can be found on the GB Non Native Species Secretariat website - see further information and useful links on the back page.

Pre-construction considerations

- Check for NNS before works start, and understand the risks of managing them
- Seek advice from a suitably qualified ecologist or specialist contractor
- Where there is a risk of NNS being introduced, spread within, or moved off-site ensure mitigation measures are considered in the planning stage
- Consider phasing the development to allow time to deal with the NNS
- Ensure NNS and locations are included within all relevant site method statements
- Where species require long-term management (for example, Japanese knotweed) develop a site management plan that addresses all issues associated with it
- Nominate a designated Clerk of Works to manage the issues of NNS on-site
- Get authorisations from NatureScot or SEPA before managing/disposing of INNS

Biosecurity on construction sites

Even if NNS aren't present on-site, consider the potential pathways of introduction (how they may be introduced) and identify measures to prevent this.

All staff and contractors should be briefed, through toolbox talks or site inductions to ensure they are aware of what NNS look like and the issues associated with them.

When dealing with NNS it is essential to maintain good site hygiene, including:

- Record any areas that are contaminated with NNS within the management plan, isolate with fencing and put up restricted access signs
- Staff and contractors working on or between sites should ensure clothing and footwear are cleaned where appropriate to prevent spread
- Tracked vehicles should not be used within an infested area
- Where cross-contamination is possible (from one site to another) consider designating plant/machinery to specific sites
- All vehicles leaving an infested area or used to transport contaminated soils or materials must be thoroughly cleaned in a designated wash-down area
- All pumps and pipework should be cleaned before use, and inlet pipes should be positioned away from water plants, just below the surface of the water
- All wash water and materials left after vehicles have been washed must be contained, collected and disposed of appropriately

Note: When disposing of NNS follow the duty of care for waste. Further information is available in the **Duty of care guidance note.** See the QR code and links on the back page.

Protected species

A number of species of animals and plants found in the wild are protected from being harmed or disturbed.

Protected animals - you may be committing an offence if you capture, kill, injure or disturb any protected animal.

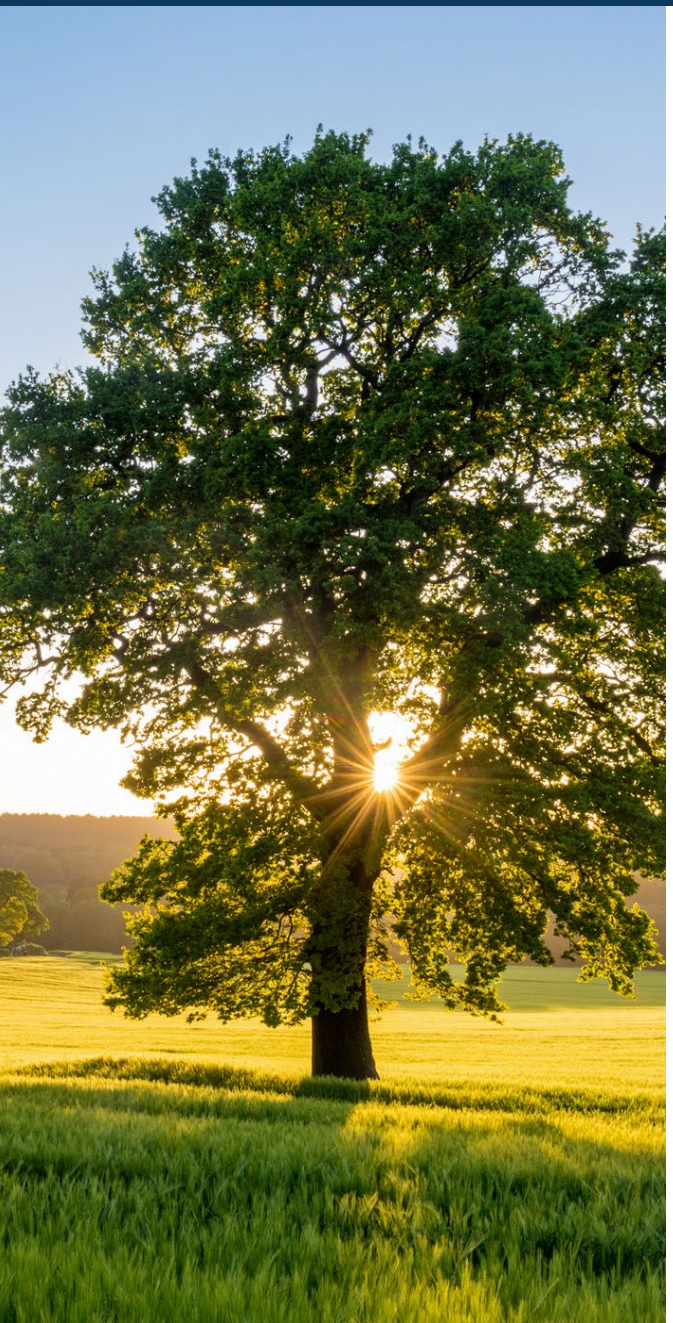
Examples of protected animal species include: birds, otters, badgers, bats, pine martens, red squirrels and water voles.

Protected plant species - you may be committing an offence if you pick, collect, cut, uproot or destroy any protected plant.

Examples of protected plant species include: many mosses, liveworts, lichen and a range of fungi.

Planning and managing works where protected species may be present

- Collect preliminary ecological information from the client
- Seek advice from a suitably qualified ecologist or specialist contractor
- Identify requirements for seasonal timings of surveys and mitigation measures
- Identify seasonal timings for affected activities (for example, roof removal affecting bat roosts or vegetation clearing affecting reptiles)
- Identify whether the site is within, or close to a designated site/protected area
- Identify if any licences are required from NatureScot (for example, for disturbance of protected species)
- Only remove trees and shrubs outwith the bird breeding season (typically February to August inclusive) and check for nesting birds before removal



Planning and managing works where protected species may be present (continued)

- Communicate ecological constraints and requirements to all relevant staff and sub-contractors
- Control measures should be included in all relevant site documents including risk assessments and method statements
- Monitor control measures to ensure they are in place when required and are maintained and effective throughout the works
- Ecological restrictions that are in place should be communicated to all staff and sub-contractors during the induction and be supported by appropriate tool box talks when required

Tree protection

Some trees are protected by a Tree Preservation Order (TPO). You will need planning permission to remove, prune, cut-down, lop, top, or ring bark any tree covered by a TPO.

- Identify trees to be retained and removed during the project design phase
- Check with the Local Authority if any TPOs are in place
- Avoid activities that could damage the roots of trees - root protection zones exist alongside the requirement to protect the trunk and crown of the tree
- If trees are protected by TPOs, use hand digging or trenchless digging methods when working near them is unavoidable

Ecology and biodiversity

Other guidance notes within this series:

- Silt management
- Surface water management
- Cement, concrete and grout
- Waste duty of care
- Fuels and oils
- Air quality and nuisance
- Decarbonisation on site
- Materials sourcing and management

Scan the QR code to view the guidance notes and associated animations on the NetRegs website

Further information and links

Nature conservation guidance on NetRegs

Scan (or click) the QR code to view the nature conservation guidance on the NetRegs website.

Useful links

Scan (or click) the QR code to view useful links on the NetRegs website.

These guidance notes have been developed by NetRegs in partnership with: