Aberdeen Planning Guidance 2023: Natural Heritage (DRAFT)

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1. Introduction

1.1 Status of Aberdeen Planning Guidance

This Aberdeen Planning Guidance (APG) supports the Development Plan and is a material consideration in the determination of planning applications.

This APG relates to, and expands on, the following policies in the Aberdeen Local Development Plan:

- Policy NE3 (Natural Heritage)
- Policies D4 (Landscape) and D5 (Landscape Design) – this APG provides further information in terms of biodiversity and enhancements through landscaping on development sites

1.2 Introduction to Topic / Background

Our natural heritage includes both biodiversity (diversity of plants and animals) and geodiversity (diversity of minerals, rocks, soils, fossils, landforms and geological processes). Together they form a variety of ecosystems and habitats, plus shape our landscapes and provide the foundation for where humans live and interact, as well as ecosystem services such as flood resilience, food, water, shelter, medicine and fuel, contributing to our overall wellbeing and quality of life.

1.3 Climate Change

<u>Biodiversity Loss and Climate Change Twin Crises</u>
In a two-way process, climate change is one of the main drivers of biodiversity loss, and destruction of ecosystems undermines nature's ability to regulate greenhouse gas emissions and protect against extreme weather, thus accelerating climate change and increasing vulnerability to it. This explains why the two crises must be tackled together with holistic policies that address both issues simultaneously and not in silos.

<u>Net Zero Targets and Natural Heritage in the Planning Process</u>
Scotland's climate change legislation sets a target for net zero emissions of all greenhouse gases by 2045. This will mean a lot of development will happen in the next few years which will bring newer facilities and infrastructure for energy production and transmission. There is a threat from this net zero development to natural heritage assets if not managed appropriately

during the planning process. The Local Development Plan endeavours to facilitate and promote energy transition and net zero solutions whilst also protecting natural heritage assets in order to combat the twin crises of biodiversity loss and climate change. This APG will assist in identifying natural heritage assets on a development site and allow this to guide the design of a development to meet multiple targets including tackling biodiversity loss, whilst ensuring climate change mitigation and adaptation and allowing appropriate siting of net zero heat and power operational infrastructure on site.

United Nations Sustainable Development Goals

This APG relates directly to the following UN Sustainable Development Goals: 11 (Sustainable Cities and Communities); 13 (Climate Change); 14 (Life under Water); and 15 (Life on Land).

2. Aberdeen Planning Guidance

2.1 Principles of Protecting Natural Heritage and Biodiversity

The National Planning Framework (NPF) vision is that planning will play an important role in protecting, enhancing and promoting access to our key environmental resources, whilst supporting their sustainable use. Scottish Planning Policy (SPP) paragraph 194 advises that development should not lead to a loss of biodiversity and ideally should enhance it. Important habitats and species should be protected from harmful development. Any adverse effects should be avoided, minimised and/or compensated, and every opportunity should also be taken to create improvements for biodiversity, so making a significant contribution to the achievement of national, regional and local biodiversity targets. Regardless of the scale of development proposals, there is usually scope for biodiversity enhancement and overall biodiversity gain opportunities.

2.2 Precautionary Principle

The loss of habitats due to development on non-designated sites and habitat degradation are on-going concerns. The full effects of land use planning on rates of decline are still not fully known. The precautionary principle calls for close adherence to nature conservation principles on all development sites, and particularly where there is uncertainty about the impacts on internationally or nationally important habitats and species.

Planning authorities should apply the precautionary principle where the impacts on nationally or internationally significant natural heritage assets are uncertain but there is sound evidence for believing that significant irreversible damage could occur.

The precautionary principle should not be used to stop development unnecessarily, however, revisions to the proposal which would eliminate the risk of irreversible damage should be considered.

2.3 Avoiding and Minimising Damage

Developers should in the first case seek to avoid or minimise harm. Where development takes place that unavoidably damages biodiversity, measures should be taken to ensure that the total ecological resource remains at least at the current level. The following hierarchy of measures should be used to improve the effects of development on biodiversity:

Avoidance – not carrying out development within a sensitive area, for example through careful siting or by limiting the extent of development.

Mitigation – reducing an unavoidable impact to a minimum, for example through the use of protective fencing or through phasing and timing of works.

Compensation – offsetting impacts which cannot be avoided by creating new habitats and/or by managing or restoring existing ones and/or by improving access and use of nature conservation sites.

Enhancements – added value to enhance biodiversity on site. For more information see section 2.11 below on ‘Enhancements and Overall Biodiversity Gain’.

The mitigation hierarchy is described in detail in the CIEEM Ecological Impact Assessment Guidelines in ‘Chapter 6: Avoidance, mitigation, compensation and enhancement’ (see Further Reading section).

2.4 Surveys and Assessments to Accompany Planning Proposals

When May an Ecological Assessment be Required?
An ecological survey is required if your development proposal is going to affect:

- natural habitats, such as wetlands, woodland, scrub, meadows, or moorland
- mature gardens
- trees that are more than 100 years old
- trees that have holes, cracks and cavities
- trees that are more than 1 metre around at chest height
- buildings such as agricultural buildings
- alterations to residential buildings in particular roofs

Further resources for biodiversity and planning are available on the Northeast Scotland Biodiversity Partnership Developers Hub (see Further Reading section for link).

Initial Assessment and Informing Design

An initial 'walk over' survey provides a quick assessment of the ecological interest of a site and helps to identify the need for further habitat and species surveys. All such 'walk over' surveys should be conducted to CIEEM 'Guidelines on Preliminary Ecological Assessments' (PEA) (see Further Reading section for details). This report should inform the production of further reports which are then submitted in support of the planning application. If conducted early on, an initial survey will save time and help to speed up the planning process. It should also help to inform the layout and design of the development as well as means to enhance biodiversity. Larger developments or developments on or close to designated or important habitats should produce a full Ecological Impact Assessment (EcIA) which should conform to CIEEM 'Guidelines for Ecological Impact Assessment (EcIA)'. If there is evidence that a site has been deliberately cleared, neglected or damaged as a pre-emptive step to development, the Council will not take account of its deteriorated condition in the determination of any planning application. In such cases, the initial walk over survey should therefore identify the original ecological potential of the site.

Linking Natural Features

Ensure natural, functioning green links and networks between habitats are not broken, and create and enhance habitat links in designated Nature Networks as these can be vital for the continued existence and movement of many species' populations. Where proposals have the potential to affect wildlife corridors, consider whether the ecological viability (ability to sustain its wildlife populations) of the corridor will be affected. More information on how to create and enhance habitat links is in the 'Landscape and Biodiversity in Developments' section below.

Survey Data and Methodologies
To avoid unnecessary delays, applicants should ensure that all survey requirements are identified as soon as possible, taking into account the correct time of year, and are conducted before submitting an application. Previous survey data should not be relied upon for new planning applications. CIEEM professional guidance allows 18 months for a survey to be considered still valid and acceptable for planning purposes, after which it must be updated (see Further Reading for details). In order to avoid development which is damaging to wildlife habitats, applicants should ensure that any previous wildlife surveys on the site are valid and were carried out at the appropriate time of year for the species in question.

When required, new surveys will be requested for each new application and should be based on current data. A decision / recommendation on a planning application will not be made until the appropriate survey is complete.

For any given species or habitat, ecological surveys must be carried out at the correct time of year by a suitably experienced, and if necessary, licensed, surveyor. Ecological survey methodologies and reporting should adhere to accepted professional standards as outlined in the CIEEM 'Guidelines for Ecological Report Writing' and their 'Good Practice Guidance for Habitats and Species' (see Further Reading section).

Species Records
For all surveys, biological records from the North East Scotland Biological Records Centre (NESBReC) must be consulted. NBN Atlas should only be used as a complement to NESBReC records. Specific recording groups, site owners, local residents and community groups could also provide further species records.

Timing of Works
Although it is illegal to disturb some animals, in some cases careful timing of operations may allow work to proceed, for example by avoiding the nesting / breeding season. Our survey calendar can be found in Appendix 1. Some operations may require licensing, see NatureScot website for more information.

2.5 Designated Sites and Habitats

There are several sites protected or 'designated' for their natural heritage value in Aberdeen, including those at an international, national and local level. Please note that development within Aberdeen has the potential to affect protected areas outside Aberdeen. For example, bottlenose dolphins from the Moray Firth SAC and grey seals from the Isle of May SAC and the Berwickshire & North Northumberland SAC.

See Further Reading for the link to NatureScot's website for information and SiteLink for mapped data of designated sites.

Table 1: Site Designations within the City of Aberdeen

Designation	Status & Source	No.	Responsible Body	*Site Locations*
Special Area of Conservation (SAC)	**Statutory** Habitats Directive (92/43/EEC) Conservation (Natural Habitats &C) Regulations 1994	1	NatureScot	*River Dee*
Special Protection Area (SPA)	**Statutory** Habitats Directive (92/43/EEC) & Conservation (Natural Habitats & C) Regulations 1994	1	NatureScot	*Ythan Estuary, Sands of Forvie & Meikle Loch Special Protection Area*
Site of Special Scientific Interest	**Statutory** Wildlife and Countryside Act 1981 Nature Conservation (Scotland) Act 2004	4	NatureScot	*Corby, Lily and Bishops Lochs* *Cove Bay* *Nigg Bay* *Scotstown Moor*
Local Nature Reserve	**Statutory** National Parks and Access to the Countryside Act 1949	4	Local Authority	*Den of Maidencraig* *Donmouth* *Kincorth Hill* *Scotstown Moor*
Local Nature Conservation Sites (LNCS)	***Non-statutory*** *Local authority*	*45*	*Local Authority*	*A list of all LNCS is available on our website, see Further reading*

For developments affecting an SAC or SPA located either within or outside the Aberdeen local authority area, a Habitats Regulations Appraisal (HRA) should be carried out on the proposed development by the planning authority. Robust information must therefore be provided within a planning submission to ensure we can undertake this assessment and the planning authority may ask for additional information to be provided. More information on carrying out a HRA for planners and developers is available on NatureScot's website (see Further Reading section).

Ancient Woodlands

These are designated sites that are irreplaceable due to their age, structure and unique associated ecology. These woods tend to support more wildlife and fungi and generally have a higher biodiversity value than a younger wood. Damage to and destroying these habitats should be avoided as these habitats cannot be replicated once lost.

The Scottish Planning Policy on Woodland states that development should "protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value".

The Scottish Government's policy on control of woodland removal states that there is a strong presumption against removing ancient semi-natural woodland or plantations on ancient woodland sites, amongst other types of woodland.

2.6 Non-Designated Sites and Habitats

Although some important wildlife habitats are protected through site designations, many other valuable habitats exist outside of designated areas. Some of these habitats will be listed in the UK or North East Scotland Local Biodiversity Action Plan (see Further Reading section for link). Others may be of low overall wildlife value, such as close-mown amenity grassland. Nonetheless, these habitats may be the only place for some species to live in that area, so their protection and conservation is important for the biodiversity of the whole city, and it may be possible to make them more beneficial for wildlife.

These habitats may be hedgerows, mature or veteran trees, species-rich grassland, wetland habitats, and woodlands. Other more 'man-made' habitats include parks, public and/or private gardens, railway embankments, roadside verges, disused quarries and disused capped landfill sites.

Together, these habitats form green corridors or networks which allow species to move from one place to another, preventing habitat fragmentation and isolation of species. Green networks may also assist species to adapt to climate change and are important for overall climate change resilience by providing ecosystem services.

Creating green networks can be an important part of open space provision in new developments. Further advice on open space requirements can be found in the Open Space and Green Infrastructure APG. Non-designated habitats and their importance is also discussed further on the North East Scotland Biodiversity Partnership (NESBiP) Developers Hub, see Further Reading section for link.

2.7 Soils

Soil is the basis of all life on land yet it is often overlooked and not well understood. Having a healthy soil ecosystem provides benefits such as support for biodiversity, food production, water and nutrient regulation as well as acting as a carbon store. Soils can capture 3-5 times more carbon than vegetation which is key for humanity to mitigate against climate change. All development should consider limiting soil-sealing. Removing vegetation and grass paving can reduce water infiltration and increase flooding, therefore developers should minimise the amount of impermeable areas in the proposed design. Nature-based solutions have multiple benefits such as reducing flooding, enhancing biodiversity and amenity. Where contamination on brownfield sites or degraded soils occur, rehabilitation and restoration should be used and designed into the scope of development. (For further information see EU Soil policy for 2030 in Further reading).

2.8 Protected Species

In some cases where protected species are present, a license may be required from NatureScot to allow development to proceed without an offence being committed. Licenses can only be issued for specific purposes which will depend on the legislation that applies to a particular species. The NatureScot website provides information on protected species and licensing (see Further Reading section for link).

To comply with the legislation that protects these species, before submitting a planning application you should:

- Identify whether protected species may be present on the development site e.g., a woodland may host bats, red squirrel and breeding birds;

- Carry out a survey to see if there is evidence that those species are present on the site, and assess the impact of the development on those species if so; and
- Produce a report to accompany your planning application. The report / plan should identify mitigation and enhancement and any licensing requirements.

For any given species, wildlife surveys must be carried out at the correct time of year by a suitably experienced, and if necessary licensed, surveyor. A guide to what makes a suitably experienced ecological surveyor can be found on the Chartered Institute of Ecology and Environmental Management (CIEEM) website (see Further Reading section). The CIEEM website also provides good practice guidance on ecological survey and assessment. Previous survey data should not be relied upon for new planning applications – CIEEM advice on the lifespan of ecological reports and surveys states that 18 months is the maximum time before a survey requires updating, although there may be cases where updated survey data is required after 12 months.

For some species including European Protected Species (EPS), a survey cannot be included as a condition of planning approval and must instead be completed and approved by the planning authority prior to granting planning permission. This is a requirement of the EPS legislation (see Further Reading section for link to this legislation).
A decision / recommendation on a planning application will not be made until the appropriate survey is complete and its conclusions have been accepted. To avoid unnecessary delays, applicants should ensure that all survey requirements are identified as soon as possible, taking into account the correct time of year.

Licenses are usually only issued after full planning permission has been granted so that there is no conflict with the planning process.

2.9 Invasive Non-Native Species

If there are any invasive non-native species (INNS) on a development site, the Council may attach a condition to any consent requiring a method statement for dealing with them. The method statement should set out how the species would be treated, disposed of and monitored. NatureScot's website provides information on invasive non-native species (see Further Reading section for more details).

2.10 Construction Environmental Management Plans (CEMP)

The Council may require a Construction Environmental Management Plan (CEMP) to be submitted prior to construction works commencing, demonstrating how environmental impacts will be avoided, minimised and mitigated during the construction phase of the development. This is usually requested through a planning condition.

2.11 Enhancements and Overall Biodiversity Gain

In line with LDP policy NE3 (Our Natural Heritage), all development proposals should make provision to achieve an overall biodiversity gain on their site. Every development, including at small scale, will have scope for some kind of enhancement for biodiversity. The most effective way to do this is to start with careful planning and layout of the development in order to protect existing natural heritage assets on site. Added value i.e. ‘net gain’ can then be added to the site. Enhancements will be highly dependent on the site and scale of development, but some examples are; careful landscaping (see section below on ‘Landscape and Biodiversity within Developments’); multi-functional SUDS; creating green walls and roofs; tree planting; bat and bird boxes; holes in or gaps under fencing for small mammals; and habitat linkages.

A competent ecological consultant will be able to suggest suitable enhancements based on the context of the site, so engaging an ecologist early on in a project is likely to save time and money.

Some of the suggestions below for mitigation and compensation can also be used to add ‘net gain’, however mitigation is not considered net gain unless it goes above and beyond what is necessary to compensate the loss which has prompted the mitigation requirement.

It should be noted that Aberdeen City Council will not accept the deliberate clearing of sites as a pre-emptive step to the planning application process. Where there is evidence that valuable natural habitats, trees or woodlands have been deliberately cleared prior to submission of a planning application, the Council's position will be to view the site as if this had not taken place. Where there is neglect or damage to such habitats and their species, their deteriorated condition will not be taken into consideration and the original ecological potential of the site will be used as the basis for assessing the acceptability of any proposals for enhancement and overall biodiversity gain.

2.12 Mitigation and Compensation

Mitigation and compensation should only be applied where impact on natural heritage assets is unavoidable through careful design and there is no alternative. In line with LDP policy NE3 (Our Natural Heritage), development should seek to achieve an overall net gain of biodiversity on site. Examples of mitigation and compensation measures can be artificial badger setts, bat / bird boxes, landscaping / SUDS (see separate section), habitat connectivity planting and wildlife crossings. Whilst some of these are also considered compensation measures and often required by licensing (e.g. badger setts / bat roost replacements), they can equally be used as mitigation and to enhance overall opportunities for wildlife on a site. A competent ecologist will be able to advise on the best options for the site-specific conditions.

Bat Boxes / Bricks

Boxes should be of a recognised standard. You can find more information on acceptable construction and siting through the Bat Conservation Trust website (see Further Reading section).

Bird Boxes / Swift Bricks

Many developments will have scope to provide various enhancements for birds including boxes. Some sites will also suit more landscape style enhancements such as bird scrapes and wetland birds will also make use of biodiverse SUDS ponds. More information on bird boxes can be found on the British Trust for Ornithology website and their book on Nestboxes (see Further Reading section).

Habitat Connectivity

This is in the main a specialist field which involves mapping and calculations for functionality. However, when we talk about habitat connectivity on a local and site-specific scale, it means that development sites should seek to avoid fragmenting green corridors such as woodland, hedgerows or riparian habitats. More information on preserving and enhancing habitat connectivity features can be found in the section on ‘Landscape and Biodiversity within Developments’ below.

Wildlife Crossings

The main objective of wildlife crossings is to enable safe movement for wildlife across man-made boundaries, such as roads. The type of crossing would be site-specific but can include large overpass style vegetated bridges for large linear infrastructure projects, underpasses for smaller roads, otter ledges under bridges and suspended rope structures for red squirrel. The siting of these crossings should be determined through observation about current

wildlife movement within the site. Proposals should also consider what current wildlife is moving across the site to determine the best option. It would be essential for these crossings to be sited where there is a natural habitat corridor on either side of the structure, to enable wildlife to feel protected to cross.

Proposals should include wildlife proof fencing (specification may vary depending on main species targeted) where appropriate to guide wildlife to the crossing point.

Compensation Measures
Where all other options have been exhausted, compensation measures may be required. These are often also required for a development license for protected species such as badgers and bats and, as such, it is likely they will be designed by the license holder for implementation by the developer. Measures include structures such as artificial badger setts and bat roost replacement structures.

2.13 Landscape and Biodiversity within Developments

Landscape design within development provides a key opportunity to protect and enhance biodiversity and add net gain to a development.

Existing Habitat
At the design stage, all existing habitats must be surveyed and considered, as described above under the section on ‘Surveys and Assessments to Accompany Planning Proposals’. The layout should seek to retain and incorporate as much of the existing vegetation as possible and be designed around existing natural features. Consideration must also be given to see how the site can be enhanced and connect into existing habitats within and out with the site.

New Planting
In addition to retaining existing vegetation and natural features, developments are likely to require new planting. Through the careful selection and use of plant species, new planting should seek to enhance and provide a buffer for existing habitats, create new habitats, and enhance biodiversity.

Structural Landscape Planting
Structural landscape planting generally consists of retained and newly planted trees, shrubs, hedges and species rich grassland / wildflower areas around site boundaries and within existing and newly created green corridors. Green

corridors can be multipurpose, incorporating new footpaths and cycle ways, to provide access through a site, linking to existing access routes and habitats outwith a site. Green corridors can also include existing watercourses. Native plants are the most suitable for providing habitat for wildlife, and they should be used for any structural, naturalistic planting.

Planting in Parks, Play Areas, Streets, Gardens and Other Areas of More Formal Open Space
Planting in other areas of open space, parks, play areas, streets and gardens should also seek to protect and enhance biodiversity. A mixture of native and non-native plants of high wildlife value is appropriate for more formal areas outwith the naturalistic structural landscape.

Examples of plants we consider appropriate for different types of landscaping can be found in Appendix 2.

Green Walls and Roofs
Grey infrastructure can be enhanced for wildlife by creating green walls and roofs within new developments and retrofitting them to existing grey infrastructure. Using green walls and roofs can provide biodiversity benefits to the city, especially where there is insufficient space at ground level. Most habitats found within the city can be replicated on a well designed green roof. Wildlife using this space can thrive as it is undisturbed habitat. Numerous studies have shown green roofs can support a range of Red Data Book invertebrate species as well as several bird species. Green walls and roofs can provide stepping stone habitat within the city which has been lost through the development of Brownfield sites. Green walls and roofs can provide a range of potential benefits in helping to tackle our twin climate and biodiversity crises, including enhancing biodiversity for wildlife, improving air quality, helping to insulate buildings and thereby reducing energy use, and catching rainwater to help reduce the risk of surface water flooding.

2.14 Sustainable Urban Drainage Systems and Biodiversity

All new developments are required to incorporate Sustainable Urban Drainage Systems (SUDS) as an approach to surface water management, except for single dwellings / extensions to residential properties or discharges to coastal waters.

Nature-based solutions such as SUDS seek to mimic natural drainage processes to slow and clean water before it is discharged into natural watercourses. They are an excellent way to integrate surface water management and water quality improvements with added biodiversity benefits. Through appropriate planting with native plants, the functional components of SUDS (ie filter strips, bioretention beds, swales, rain gardens, green roofs and walls) can all make a valuable contribution to

the creation of new habitats. SUDS schemes should be seen to provide amenity to enhance developments and add overall biodiversity gain whilst being straightforward to maintain.

More information on SUDS can be found in the CIRIA SUDS manual (see Further Reading section for details).

2.15 Lighting

All developments should minimise the impacts of lighting schemes on wildlife, both during construction and operation. A Lighting Impact Assessment (LIA) which conforms to the Bat Conservation Trust / Institute of Lighting Professionals guidance should be provided for all developments where bats are confirmed to be roosting at the site. An LIA is also required for larger scale developments where bats are known to forage in the area to ensure that lighting schemes have minimal impact on bats and other wildlife.

More information on lighting and wildlife can be found in the BCT/ILP Guidance Note of Bats and Artificial Lighting (see Further Reading section).

2.16 Other Statutory Assessments

Depending on the nature of development proposed and the site-specific circumstances, developers should also be aware of the potential requirement for other statutory assessments including:

- **Environmental Impact Assessment (EIA) -** This assesses impacts on the likely significant effects (positive and negative) of the development. These developments are categorized into Schedule 1 and Schedule 2 developments. Schedule 1 developments will always require an EIA whereas Schedule 2 might depending on size, nature and location to sensitive species and habitats. A full list of Schedule 1 and Schedule 2 developments can be found in the Regulations (see Further reading for link).

- **Habitat Regulation Assessment (HRA) –** This assesses plans that are deemed likely to have an adverse effect on a European site that was originally designated under European legislation. A HRA comprises both the process for determining whether an Appropriate Assessment of the environmental risk is required and the Appropriate Assessment itself. The proposal will be assessed against the conservation objectives that the European site was

designated for. Consultation with NatureScot will be required. Only those proposals that will not adversely affect the integrity of any European site will be taken forward.

- **Strategic Environmental Assessment (SEA) –** This is a requirement for all qualifying public plans, programmes and strategies. The aim of this assessment is to ensure that any development is sustainable and increase opportunities for public participation in decision making. Consultation authorities would include NatureScot and SEPA.

The Local Authority will be able to advise you whether your proposed work/ project would trigger a statutory assessment at screening stage and can provide comments on the type of surveys that might be required at scoping stage.

It should be noted that these processes are defined in legislation and may therefore be subject to future update / change (see Further Reading section for links to Scottish Government guidance on these statutory assessments).

3. Definitions

Biodiversity – The variability in living organisms and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems (UN Convention on Biological Diversity, 1992).

Blue Features – Include rivers, lochs, wetlands, canals, other water courses, ponds, coastal and marine areas including beaches, porous paving and sustainable urban drainage systems.

Climate Change Adaptation – The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities.

Climate Change Mitigation – Reducing the amount of greenhouse gases in the atmosphere and reducing activities which emit greenhouse gases to help slow down or make less severe the impacts of future climate change.

Ecosystems Services – The benefits people obtain from ecosystems; these include provisioning services such as food, water, timber and fibre; regulating services that affect climate, floods, disease, waste and water quality; cultural services with recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis and nutrient cycling.

Green Infrastructure – Includes the 'green' and 'blue' (water environment) features of the natural and built environments that can provide benefits without being connected. Green features include parks, woodlands, trees, play spaces, allotments, community growing spaces, outdoor sports facilities, churchyards and cemeteries, swales, hedges, verges and gardens.

Green Networks – Connected areas of green infrastructure and open space that together form an integrated and multi-functional network.

National Nature Reserve (NNR) – An area considered to be of national importance for its nature conservation interests.

Open Space – Space within and on the edge of settlements comprising green infrastructure and/or civic areas such as squares, market places and other paved or hard landscaped areas with a civic function. Detailed typologies of open space are included in PAN65.

Ramsar Sites – Wetlands designated under the Ramsar Convention on Wetlands of International Importance.

Sensitive Receptor – Aspect of the environment likely to be significantly affected by a development, which may include for example, population, fauna, flora, soil, water, air, climatic factors, material assets, landscape and the inter-relationship between these factors. In the context of planning for Zero Waste, sensitive receptors may include aerodromes and military air weapon ranges.

Site of Special Scientific Interest (SSSI) – An area which is designated for the special interest of its flora, fauna, geology or geomorphological features.

Sustainable Development – Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The Brundtland Definition. Our Common Future, The World Commission on Environment and Development, 1987.

4. Further Reading

EPS Licensing tests https://www.nature.scot/professional-advice/protected-areas-and-species/licensing/european-protected-species-licensing

European Protected Species - terms of guidance: Chief Planner letter https://www.gov.scot/publications/european-protected-species-chief-planner-letter/

Barn Owl Trust https://www.barnowltrust.org.uk/wp-content/uploads/Barn-Owls-and-Rural-Planning-Applications-a-Guide-2015.pdf

BCT/ILP Guidance Note 8 Bats and artificial lighting https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

https://www.bto.org/our-science/publications/bto-books-and-guides/nestboxes-your-complete-guide

Getting the Best from Our Land - A Land Use Strategy for Scotland[78]
The 2020 Challenge for Scotland's Biodiversity[79]
https://www.gov.scot/publications/scottish-biodiversity-strategy-post-2020-statement-intent/
European Landscape Convention[80]
Nature Conservation (Scotland) Act 2004[81]
The Conservation (Natural Habitats etc) Regulations[82]
The Wildlife and Countryside Act 1981[83]
EU Birds Directive - 2009/147/EC[84]
EU Habitats Directive - 92/43/EEC[85]
Ramsar Convention on Wetlands of International Importance[86]
National Parks (Scotland) Act 2000[87]
River Basin Management Plans[88]

5. Technical Advice Part 1 – Bats and Development

Bats are European Protected Species (EPS) and are protected by European, UK and Scottish Law.

Bats and Licensing

In some circumstances, actions that would otherwise constitute an offence can be carried out under a licence. NatureScot has a power to grant licenses for scientific, educational or conservation purposes including surveys. Where an impact on bats cannot be avoided, NatureScot will only grant a license if the proposal satisfies all of the 3 tests;

1. There must be a licensable purpose for which licenses can be granted.
2. There must be no satisfactory alternative.
3. The proposed action must not be detrimental to maintaining the species at 'favourable conservation status'.

Likewise, the planning authority will only grant planning permission if it is satisfied that a license can be granted, where needed. Further information on the how NatureScot assesses applications against these 3 tests is available on the NatureScot website (see Further reading for link).

Bat Survey Standards

As bats can be disturbed during survey work, surveys must be carried out by a surveyor that is suitably experienced. All surveys submitted for development proposals must conform to the Bat Conservation Trust (BCT) bat survey guidelines 3rd edition or later (see Further Reading section for link). Surveys must be undertaken at the correct time of year (see Appendix 1 for survey calendar).

As agreed with NatureScot, the following timings for bat surveys are acceptable based on our North-East climatic conditions (please note some of these differ from the BCT guidelines);

- Mid May through to Mid-August is the best time to carry out activity surveys
- October through to March is the best time to carry out hibernation surveys
- Preliminary roost assessments can be carried out any time of the year
- Potential roost features of trees best seen when leaves are off the trees but can be done any time of year

Potential Bat Roosts

When an application for development is received without a bat survey and it is suspected that a bat roost may be present, the Council will request a preliminary roost assessment (PRA) bat survey to establish any impacts on bats. Depending on the findings of this survey, further survey work could be required and is likely to be seasonal. It is therefore recommended that if in doubt a PRA is commissioned at an early stage in the design and planning process so that any follow up surveys can be programmed in.

A bat survey cannot be included as a condition of planning permission but must be completed prior to granting planning permission. This is a requirement of the EPS legislation. The local planning authority can refuse planning permission under its duty to protect EPS. If the survey identifies the presence of bats or their roosts, a bat protection plan should be submitted and as above the planning authority will need to satisfy themselves that a derogation license would be forthcoming by NatureScot.

Permitted Development

Permitted development rights mean that certain improvement projects will not require planning permission. However, even small-scale developments such as small alterations or extensions could affect bats. This could include householder or other forms of development.

Therefore, the same principles of this APG should be followed. If it is suspected that any permitted development work could not proceed without an offence being committed, NatureScot should be contacted prior to commencement. It is recommended that assistance is sought from an experienced and licensed bat surveyor at the start of a project to save time and money.

Bats and Structures

It’s important to note that bats can be found in any kind of structure, old or new - any roof, wall cavities and window frames could host a potential bat roost. Industrial building features such as roller shutter doors have also attracted roosting bats. Boarded up windows on derelict buildings are known to host roosting bats as well.

Summer roosts, frequently found in buildings, are generally close to good feeding habitat and rich in insects. Good habitats include grassland, wetland, rivers and woodland. Bats hibernate in winter but wake occasionally to feed on milder evenings. Winter hibernation sites include caves, cellars, ice houses, tunnels, bridges and other places which provide cool, stable conditions. Hibernating bats are very vulnerable to disturbance. Tree holes can be used in both summer and winter.

Built Structures – When a Bat Survey Will Always Be Required

Where planning permission is sought, a survey will always be required for any structural work or demolition of any building with a known bat roost or where bats are known to be present in the building. This may be highlighted by a Northeast Scotland Biological Records Centre (NESBReC) data search or as notified by any competent authority NatureScot or other.

Built Structures – When a Bat Survey May Be Required

Where it is not known if bats or a bat roost is present, a preliminary roost assessment (PRA) survey may be required for development or demolition including alterations or extensions that would affect the following types of buildings:

- Any constantly heated building such as residential homes, hospitals, schools and swimming pools.
- Traditional buildings including churches and castles with complex roof spaces.
- Stone and slate buildings including farmhouses; steadings; estate lodges; gatehouses; mill buildings; and old school buildings with an intact or almost intact roof structure.
- Underground and other structures such as tunnels, kilns, cellars, ice houses, or fortifications which provide stable winter temperatures can provide appropriate hibernation sites; and
- Any building or structure close to freshwater and wetland habitats (such as rivers, burns, streams, ponds or wet grassland), woodland, hedgerows and/or lines of trees. This includes bridges and other structures over water features or wet ground.
- Industrial or agricultural buildings near suitable foraging habitat

Trees

Other activities that may require a bat survey include proposed tree work (felling or pruning) and development activities affecting trees:

- Old and veteran trees older than 100 years; and/or
- Trees with obvious holes, cracks or cavities; and/or
- Trees with a girth greater than 1m at chest height.

Note that trees other than these can sometimes contain bat roosts! Trees are more likely to be used by bats if they are linked by other trees or hedgerows to woodland or other habitat suitable for bats. It is always good to link the tree survey data on a site to an assessment of potential bat roost features of each tree, this way potential or confirmed roosts are easier to identify and protect for arboricultural operatives.

Applicants should not presume that bats will not be present outside the areas listed above. Where development is proposed outside these areas, it will be up to the planning authority to determine if a survey is required or not. If there are reports that bats have been seen flying over a site where development is proposed, this may mean that they are foraging in the area and may have a roost nearby. It is recommended that for outside known sites used by bats, sightings can be used together with information on the type of buildings present along with the type of habitats in the vicinity, to determine whether a bat survey should be carried out.

Planning Conditions
Conditions may be placed on planning consents to ensure that appropriate protection is afforded to bats.

Examples may include:

- Restrictions on the timings when work can take place if a bat roost is present.
- Use of building materials such as bat bricks or special tiles which provide access points for bats.
- Management prescriptions to be agreed for habitats adjoining the development, e.g., grassland, scrub, woodland, hedgerows.
- The creation of feeding habitats adjoining the development, e.g., grassland, meadows, large ponds; and
- Appropriate lighting considerations (see ‘Bats and artificial lighting in the UK’ link in Further reading).

Remember, bats can be found in any tree and structure / building, both old and new, if it is in the appropriate environment.

6. Technical Advice: Part 2 – Buffer Strips for Water Bodies

A buffer strip is a wooded or vegetated area surrounding a waterbody or watercourse, which helps to protect it from the physical and polluting impact of adjacent land uses. Buffer strips also provide valuable habitats and recreational opportunities, and they may also count towards open space requirements for new development (see separate APG for Open Space and Green Infrastructure).

Recommended Width of Buffer Strips
The optimum width of a buffer strip adjacent to water bodies will be affected by the width of the water body, site conditions and topography. Buffer strips should be proportional to the bed width of the water body and should be a minimum of 6 metres with up to 20 metres+ on either side for larger water bodies such as the Rivers Dee and Don. The general rule is that the bigger the water body, the more space will be required for the buffer strip.

Table 1: Types of water bodies and effect on buffer strip width

Type of Water Body	***Information***
Semi-natural habitat	*if present and adjacent to a water body (e.g., riparian woodland), the whole of this habitat should be protected, regardless of width.*
Steeply sloping ground	*run-off will be faster, and a wider buffer will be required.*
Straightened / Realigned water bodies	*where there are opportunities to undertake restoration of straightened or realigned water bodies, a wider buffer may be required*
Still water	*for example, lochs and ponds, the margin should be between 6m and 20m wide, depending on the size of the water body with larger areas having a wider buffer.*
Ditches	*for smaller ditches there is some discretion to reduce the buffer strip to a minimum of 3m depending on requirements for access for maintenance.*
Bridge abutments	*where possible bridge abutments must be a sufficient distance back from a river bank to allow for future river movement, and where appropriate access under the structure*

Table 2: Guidelines for width of buffer strips

Width of Water Body	***Width of Buffer Strip***
Less than 1 metre	*6 metre*
1-5 metres	*6-12 metres*
5-15 metres	*12-20 metres*
15 metres plus	*20 metres plus*

Table 2 is supported by the Scottish Environment Protection Agency (SEPA) and NatureScot. This table provides guidelines only, as the width will be dependent on-site size, plus, other conditions such as the nature and topography of the surrounding land. Areas at risk of disturbance by fluvial processes will require a geomorphological assessment in order to assess the appropriate buffer strip.

Scottish Planning Policy states that development should not be permitted where there is a significant probability of it being affected by flooding, increase the probability of flooding elsewhere, or affect the storage capacity of a functional flood plain. This overrides the buffer width recommendations made in this supplementary guidance.

Creating a Buffer Strip

The characteristics of a buffer strip will influence its effectiveness. During the development phase, buffer strips should be fenced off and vegetation should be left undisturbed, and this is particularly so where wetlands, woodland, grassland or other semi-improved habitats are present. Within a buffer strip, all works should be carried out in accordance with SEPA Pollution Prevention Guidelines.

If the land forming the buffer strip is arable or improved grassland, there may be some merit in sowing with a grassland or wildflower mix.

This should be made up of native species from a local source. Some planting of locally native trees and shrubs can enhance a buffer strip and can help to stabilise banks and limit erosion. However, care must be taken to ensure that new planted areas do not cause hydraulic issues downstream in a river. Overhanging trees create shade and the leaf litter can provide shelter and food for invertebrates. Care should be taken to avoid too much planting with at least 50% of the water body left open to sunlight during the summer when leaves are on the trees.

It is important to avoid gaps in buffer strips to provide continuity of habitat. The creation of hard standing such as vehicle access track should be avoided within buffer strips as this will increase run-off, however, pedestrian access with permeable surfaces is generally acceptable.

Management of Buffer Strips

Management measures will be site specific and should be included in any Landscape Maintenance Plan. In general, the preference would be to leave buffer strips as natural areas with limited management of the vegetation. This will avoid buildup of leaf litter, development of scrub, and in the case of rivers, risk of blockages in the channel downstream.

More intensive management of some areas may be appropriate for particular uses such as access and recreation. Wherever possible buffer strips should be retained with open space for the development to ensure long term protection.

For information regarding Groundwater Dependent Terrestrial Ecosystems see SEPA’s website (see Further Reading section).

Appendix 1: Survey Calendar

Surveys not possible	Limited survey period	Optimal survey period

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitats/ Vegetation	Phase 1 (sub-optimal) No other detailed plant surveys Mosses and lichens only			Detailed habitat assessment surveys, National Vegetation Classification, Surveys for higher plants and ferns. Mosses and lichens in April, May and September only						Phase 1 (sub-optimal) No other detailed plant surveys Mosses and lichens only		
Badgers	Limited sett/bait surveys		Limited activity, sett surveys		Limited bait marking and sett surveys				Sett surveys			Limited sett/bait surveys
Bats	Inspection of hibernacula, tree and building roosts for Potential Roost Features			Limited activity	Summer roost emergence and activity surveys (maternity roosts start to form in May, females give birth in June, mating starts in September)				Limited activity			Inspection of hibernacula, tree and building roosts for Potential Roost Features
	Note: Potential Roost Features and internal building inspection surveys are possible all year round. Trees are best surveyed in winter when there are no leaves.											
Birds	Winter species			Breeding birds/ migrant species			Breeding birds			Low activity		Migrant species			Winter species	
Cetaceans - whales, dolphins, porpoises	Cetaceans can be surveyed all year, but the appropriate survey methodologies can depend on the type and scale of the development and/or the proximity to protected sites - see SNH guidance.											

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Freshwater Pearl Mussels	Surveys not possible			Optimal survey period							Surveys not possible	
Fish	For coastal, river and stream dwelling species, the timing of the surveys will depend on the migration pattern of the species concerned. Where surveys require information on breeding, the timing of surveys will need to coincide with the breeding period, which may be during summer or winter months, depending on the species.											
Great Crested Newts	Newts hibernating		Pond surveys for adults / Terrestrial surveys Egg surveys April to mid-June / Larvae surveys from mid-May				Terrestrial habitat and larvae surveys		Terrestrial habitat surveys		Newts hibernating	
Invertebrates	Invertebrates hibernating		Limited activity	Terrestrial invertebrate surveys						Limited activity	Invertebrates hibernating	
Amphibians	Amphibians hibernating			Surveys of breeding ponds for adults Surveys for tadpoles from May onwards					Surveys for adults on land		Amphibians hibernating	
Otters	Limited by vegetation cover and weather conditions rather than seasons											
Pine Martens	Surveys may be conducted all year-round weather permitting Optimum time is spring and summer. Surveys for breeding dens from March to May											
Red Squirrel	Surveys may be conducted all year-round weather permitting Optimum time is spring and summer. Surveys for breeding dens from March to May											

Appendix 2: Landscaping Plant Choices

Native Plants

To maximise biodiversity, native plants should be used to create structural, naturalistic planting around site boundaries and within green corridors running through developments. They should also be used for creating new woodlands.

Native Trees

Botanical Name	**Common Name**	**Botanical Name**	**Common Name**
Acer campestre	Field maple	*Prunus padus*	Bird Cherry
Alnus glutinosa	Alder	*Prunus spinosa*	Blackthorn
Betula pendula	Silver Birch	*Quercus petraea*	Sessile Oak
Betula pubescens	Downy Birch	*Quercus robur*	Pedunculate Oak
Carpinus betulus	Hornbeam	*Salix aurita*	Eared sallow
Crataegus monogyna	Hawthorn	*Salix caprea*	Goat willow
Corylus avellana	Hazel	*Salix cinerea*	Grey Sallow or Willow
Euonymus europaeus	Spindle	*Salix myrsinifolia*	Dark-leaved Willow
Ilex aquifolium	Holly	*Salix purpurea*	Purple Osier
Juniperus communis	Juniper	*Salix viminalis*	Common Osier or Basket Willow
Malus sylvestris	Crab Apple	*Sorbus aucuparia*	Rowan
Pinus sylvestris	Scot's Pine	*Tilia cordata*	Small leaved lime
Populus tremula	Aspen	*Taxus baccata*	Yew
Prunus avium	Wild Cherry		

Native Hedges

Mixed native hedges are an attractive way to mark boundaries. They can provide a wind break, valuable screening, year-round interest, and colour. They provide connectivity, habitat, and a valuable food source for wildlife. They enable wildlife to travel through

and around a development safely. They can be used for structural planting around site boundaries and for green corridors running through a site.

The following native species are suitable for mixed hedgerows:

Botanical Name	**Common Name**	**Botanical Name**	**Common Name**
Crataegus monogyna	Hawthorn	*Prunus spinosa*	Blackthorn
Corylus avellana	Hazel	*Rubus idaeus*	Raspberry
Ilex aquifolium	Holly	*Sambucus nigra*	Elder
Malus sylvestris	Crab Apple	*Viburnum opulus*	Guelder rose

Aim to use a mixture of at least 5 native species, e.g., 60% Hawthorn, 10% Blackthorn, 10% Hazel, 5% Holly, 5% Guelder Rose, 5% Dog Rose, 5% Elder. Use locally sourced native species wherever possible.

Hedge maintenance

To maximise the value of a mixed native hedge for wildlife, only trim every 2nd or 3rd year to encourage flowers, berries, and nuts. Hedges planted 3m back from a boundary or path may require very little pruning. To avoid harming nesting birds and disturbing other wildlife, the trimming of hedges should never be undertaken between the end of March and the end of August. The best time to prune hedges is between January and February.

Native Shrubs/Small trees

Native shrubs and small trees support more wildlife than non-native and should be used for structural, naturalistic planting. They can also be mixed with high wildlife value, non-native shrubs in more formal areas. Shrub borders provide similar wildlife habitat to hedges.

Botanical Name	**Common Name**	**Botanical Name**	**Common Name**
Corylus avellana	Hazel	*Rosa canina*	Dog rose
Cytisus scoparius	Broom	*Rosa rubiginosa*	Sweet briar

Crataegus monogyna	Hawthorn	*Rosa sherardii*	Sherard's downy Rose
Prunus spinosa	Blackthorn	*Rubus idaeus*	Raspberry
Ribes rubrum	Red currant	*Sambucus nigra*	Elder
Ribes spicatum	Erect spiked red currant	*Ulex europaeus*	Gorse
Rosa caesia	Hairy Dog Rose	*Viburnum opulus*	Guelder Rose

Trees for parks, streets, play areas, and other areas of more formal open space (the lists below are non-exhaustive, other species may also be suitable)

Mixtures of large, medium, and small trees should be accommodated, where space allows, to provide variation of habitat. Native trees from the lists above should be mixed with non-native trees to enhance biodiversity.

Large trees		**Small trees**	
Botanical Name	**Common Name**	**Botanical Name**	**Common Name**
Acer pseudoplatanus	Sycamore	*Crataegus laevigata* 'Pauls Scarlet'	Red flowered Hawthorn
Fagus sylvatica	Beech	*Liquidamber styraciflua*	Sweet Gum
Fagus sylvatica 'purpurea'	Copper Beech	*Malus* 'John Downie'	Flowering Crab Apple
Quercus robur 'fastigiata'	Fastigiate Oak	*Prunus serrula*	Tibetan Cherry
Quercus frainetto	Hungarian Oak	*Pyrus calleryana* 'Chanticleer'	Ornamental Pear
Quercus rubra	Red Oak	*Sorbus* 'Joseph Rock'	Mountain Ash
Tilia euclora	Caucasian Lime		
Tilia tomentosa	Silver Weeping Lime		

Medium trees			
Acer platanoides	Norway maple		
Acer cappadocicum	Cappadocian Maple		
Betula pendula 'Laciniata'	Swedish Birch		
Carpinus betulus 'Frans Fontaine'	Fastigiate Hornbeam		
Fagus sylvatica 'Dawyk'	Fastigiate Beech		
Juglans regia	Common Walnut		
Parrotia persica	Persian ironwood		
Picea omorika	Serbian Spruce		
Prunus avium 'Flore Plena'	Wild Cherry (double flowered)		
Prunus yedoensis	Yoshino Cherry		
Sorbus aria 'Magnifica'	Whitebeam		

Street Trees (with narrow crowns)
Streets with broad verges and adjacent to open space can accommodate native and non-native trees with broader crowns.

Acer campestre 'Elsrijk' Fastigiate (Fastigiate field maple)	Height 10m Spread 4m

Carpinus betulus ‘Frans Fontaine’ (Fastigiate Hornbeam)	Height 12m Spread 5m
Fagus sylvatica Dawyck Purple (Fastigiate Purple Beech)	Height 12m Spread 6m
Malus tschonoskii (Chonosuki crab apple)	Height 8m Spread 6m
Pinus sylvestris ‘Fastigiata’ (Fastigiate Scots Pine)	Height 8m Spread 3m
Populus tremula ‘Erecta’ (Fastigiate Aspen)	Height 12m Spread 4m
Populus tremula ‘Fastigiata’ (Fastigiate Aspen)	Height 10m Spread 4m
Prunus sargentii ‘Rancho’ (Upright Sargent’s Cherry)	Height 6m Spread 4m
Pyrus calleryana ‘Chanticleer’ (Callery Pear)	Height 12m Spread 4m
Quercus robur ‘Fastigiata’ (Fastigiate Oak)	Height 15m Spread 6m
Robinia pseudoacacia ‘Pyramidalis’ (Fastigiate False Acacia)	Height 12m Spread 5m

Non-native hedges and shrub beds (for formal open space, other than structural planting)
The following are suitable for formal non-native hedgerows and shrub beds to attract pollinators and other wildlife. Mixing with native species enhances biodiversity.

Berberis spp.	Escallonia spp.
Ceanothus spp.	Lavandula spp.

Cornus spp.	Pyracantha spp.
Elaeagnus spp.	Viburnum spp.

Fruit Trees

Fruit trees provide nectar for pollinators and food for wildlife and people. To further enhance biodiversity and provide a local food source, consider planting fruit trees within native structural plantings, within more formal areas parks, gardens and other areas of open space. They can also be included within mixed native hedgerows. The following varieties are either of Scottish origin or have been cultivated in Scotland for a long period of time.

Apple trees	**Plum trees**
Alderman Beauty of Moray Bloody Ploughman Cardinal Coul Blush Cutler Grieve James Grieve Tam Montgomery Hoods Supreme Lass O Gowrie Lord Roseberry Oslin (Arbroath Pippin Thorle Pippin Tower of Glamis	Victoria Marjorie's Seedling Opal Czar Rivers Early Gordon Castle:
Pear trees	**Cherry trees**
Grey Auchan	Morello

Chalk/ Crawford Craig Cuisse Madame Drummond /Charnock Lindores Maggie Duncan Seggie Den	Lapin (Cherokee) Colney Cariad