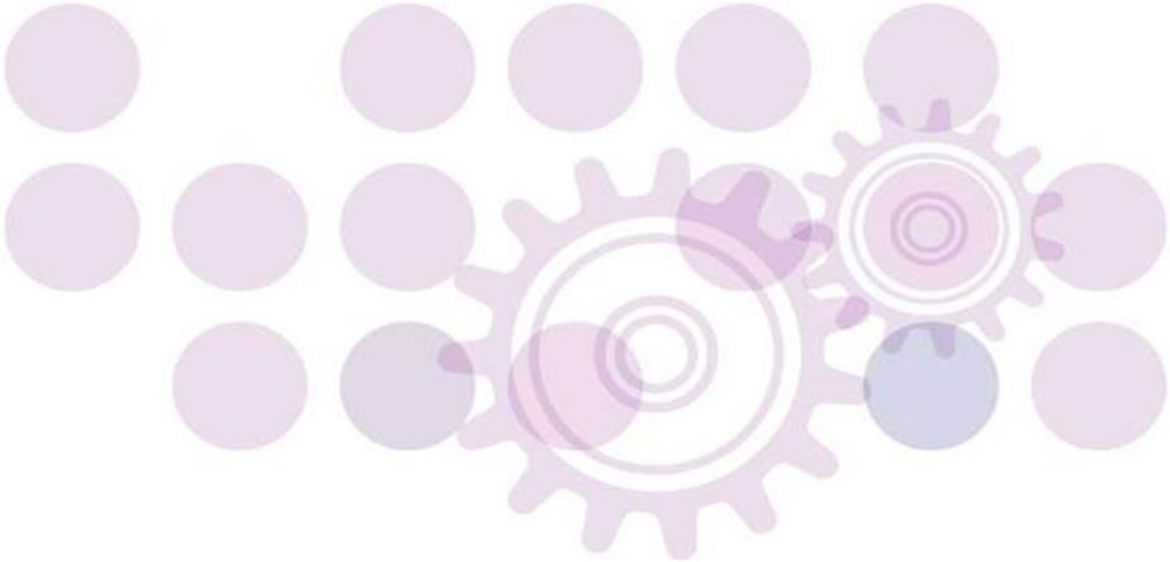
spd

supplementary planning document

Biodiversity and Nature Conservation SPD

June 2022



THE LIVING COAST

Brighton & Lewes Downs UNESCO World Biosphere Region

Brighton & Hove City Council

Contents

This SPD has been co-produced by Brighton & Hove City Council, The Living Coast Biosphere, Place Services Essex County Council, and East Sussex County Council.

About this SPD

This Biodiversity and Nature Conservation Supplementary Planning Document (SPD) has been prepared to assist planning applicants and developers understand the importance of nature and how development can help deliver biodiversity improvements and net gains. The SPD provides detailed guidance aimed at ensuring that new development is designed sustainably so that it can meet the needs of our natural environment whilst complying with local, national and international policies and laws around planning, development and nature.

This document supports the council's objectives as set out in the Corporate Plan 2020 – 2023: A Fairer City with a Sustainable Future which includes key priorities for protecting, investing in, and improving the city's biodiversity. It supports the implementation of planning policies set out in key planning policy documents: Brighton & Hove City Plan (Parts One and Two), in particular City Plan Part One Policy CP10 Biodiversity and City Plan Part Two Policy DM37 Green Infrastructure and Nature Conservation.

The terms 'nature', 'natural environment' and 'biodiversity' are used interchangeably in this document to talk about living things such as plants, insects, animals, birds and fish that are interconnected and all part of our city, as well as the habitats and conditions that are required for all living things to thrive, such as healthy soils, fresh air and clean water, as well as open greenspace, grasslands, shrubs, woodland, aquatic, marine and coastal environments, which locally all form key elements of The Living Coast UNESCO Biosphere.

The SPD describes the biodiversity resource of the city, summarises key legislation and planning policies, provides examples for integrating biodiversity into development, and includes a step-by-step guide of the planning process in relation to the consideration of biodiversity.

The Annexes provide further details and information on Protected and Priority habitats and species, legislation, survey seasons, hazard prevention, habitat creation, and includes the 'Biodiversity Checklist' which will be a validation requirement for certain types of planning applications.

This SPD is aimed to be used by:

- planning applicants and their design team when designing new development and preparing planning applications;
- planning officers when offering pre-application advice and assessing applications;
- councillors when making planning decisions; and
- residents, amenity groups and other organisations commenting on planning applications.

Starling Murmuration, Brighton Seafront. © The Living Coast

How to use this SPD

The following table signposts to some key sections of the SPD.

What do you want to find out about?	**Relevant section**
Local biodiversity in Brighton & Hove	Section 2 and Annex 3
Relevant legislation and key requirements	Section 3 and Annex 1
Local planning policy requirements	Section 4 and Annex 2
Key considerations when designing a proposal	Section 5
The mitigation hierarchy	Section 5 and Section 7
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Examples and case studies of biodiversity measures that can be incorporated into development	Section 6
How to create and enhance habitats	Section 6 and Annex 7
The stages of the planning process and what is required at each stage	Section 7
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What is needed to validate an application	Section 7: Stage B; and Annex 5
When do I need to use the local biodiversity checklist	Section 7: Stage A1; and Annex 5
When to carry out ecological survey	Annex 4
How to prevent hazards during construction	Annex 6

1. Introduction

1.1 Local context

Biodiversity describes the variety of all life on Earth, in all its forms, interactions and interconnectedness. It incorporates all habitats and species, both rare and common, and includes genetic diversity. Biodiversity is our life support system, with nature providing all the essential and vital ecosystems services we need to be a healthy and thriving society.

Brighton and Hove is a vibrant biodiverse living landscape, rich in biodiversity from peregrines on tower blocks to rare leeks on the vegetated shingle beaches. The city is formed of the interconnected and interweaving urban areas, including the city's parks and greenspaces, coastal, marine and chalk downland habitats, allowing wildlife to move, migrate and thrive. Even seemingly sterile urban environments can provide a haven for wildlife, with buildings providing important nesting and roosting habitats for birds and bats, and street trees, churchyards and urban gardens supporting species such as hedgehogs, butterflies and fungi.

There are habitats and species of both global and local importance and rarity in Brighton and Hove, particularly in relation to our three key environments: the chalk downland; urban areas, and marine and coastal areas. In 2014, the value of the city and landscapes in the wider area was recognised through its global designation as The Living Coast Brighton and Lewes Downs UNESCO Biosphere Region. As well as recognising the area's rich biodiversity, the designation also focuses on innovation in sustainable socioeconomic development and environmental education from local councils, communities and other organisations. The Living Coast Biosphere is a living laboratory where projects and new approaches seeks to explore and understand how people and nature can flourish together both now and in the future.

Within this wider context and due to its popularity, the city also has a high demand for additional development to meet a range of citywide needs including a significant need for housing. However, the city has a very constrained land supply; competition for land is therefore high and sites have to work hard to ensure multiple policy objectives can be achieved.

1.2 Local priorities

Biodiversity is under increasing pressure at local, national and global levels with habitat loss, species decline and extinction a real threat exacerbating our changing and increasingly unstable climate. Climate change and biodiversity declines are attributed to human causes. Habitats and species once considered to be common in the city are facing increasing stresses with many at breaking point.

Recognising this pressure, the council declared a Climate and Biodiversity Emergency in 2018 to urgently address the climate crisis and the need to reverse the decline in natural habitats and wildlife.

The Corporate Plan 2020 sets out priorities to support the objective of becoming a Sustainable City including the commitment for the city to become carbon neutral by 2030; to create and improve public open spaces including investing in biodiversity within parks; and to promote and protect biodiversity including through habitat creation such as the Waterhall rewilding, tree planting and green corridors. The council has recently published its Carbon Neutral 2030 Programme setting out the actions required to reach the carbon neutral target and to address the climate and biodiversity emergency.

Corporately, it is recognised that planning has a key role to play in encouraging sustainable development in the city with a key objective being protection and enhancement of biodiversity throughout the development process.

1.3 Purpose, role and status of the SPD

The aim of this SPD is to set out guidance and best practice advice to ensure that development complies with the relevant legislation, the NPPF, and the requirements of local planning policy - principally the City Plan Parts 1 and 2 relating to the conservation and enhancement of biodiversity. This includes local requirements relating to biodiversity net gains, as well as the requirements relating to achieving mandatory measurable biodiversity net gain arising from the Environment Act 2021.[1]

The purpose of this SPD is to provide guidance to:

- ensure development is delivered in accordance with the mitigation hierarchy;
- ensure biodiversity is adequately protected and enhanced throughout the development process;
- support the provision of appropriate biodiversity net gains;
- describe how proposals can be designed with biodiversity embedded;
- describe how measures which improve biodiversity can support the achievement of multiple policy objectives;
- ensure proposals accord with relevant legislation, including the Environment Act 2021, national policy, government advice, and the British Standard BS42020:2013 Biodiversity – Code of practice for planning and development;
- explain terminology associated with biodiversity conservation;
- assist applicants to gain planning permission efficiently and effectively, informing them of the information required to support their planning applications.

Although not part of the development plan, SPDs can be accorded significant weight as a material consideration in the determination of planning applications. This SPD supersedes the Nature Conservation and Development SPD (2010).

[1] At the time of writing, Regulations and secondary legislation setting out the implementation of the requirements of the Environment Act are anticipated for late 2022.

2. The Biodiversity Resource in Brighton and Hove

Biodiversity underpins everything, exists everywhere and includes the abundant species as well as rarities. The city comprises three key environments: the rural downland; the urban areas, and the marine and coastal areas. Within these environments, numerous sites have been designated for their nature conservation value. Many other areas of the city and its surrounds also contribute to biodiversity including the many city parks and open spaces and even private gardens.

This section identifies and summarises designated sites, and the legally protected, notable and Priority habitats and species present, which need to be identified, protected and enhanced throughout the design and development process (inclusive of direct and indirect impacts). All such sites and species are material to planning decisions.

Detailed information about designated sites, Priority habitats, and existing records of protected, notable and Priority Species can be obtained through a data search from Sussex Biodiversity Record Centre.

2.1 Designated sites

Statutory designated sites

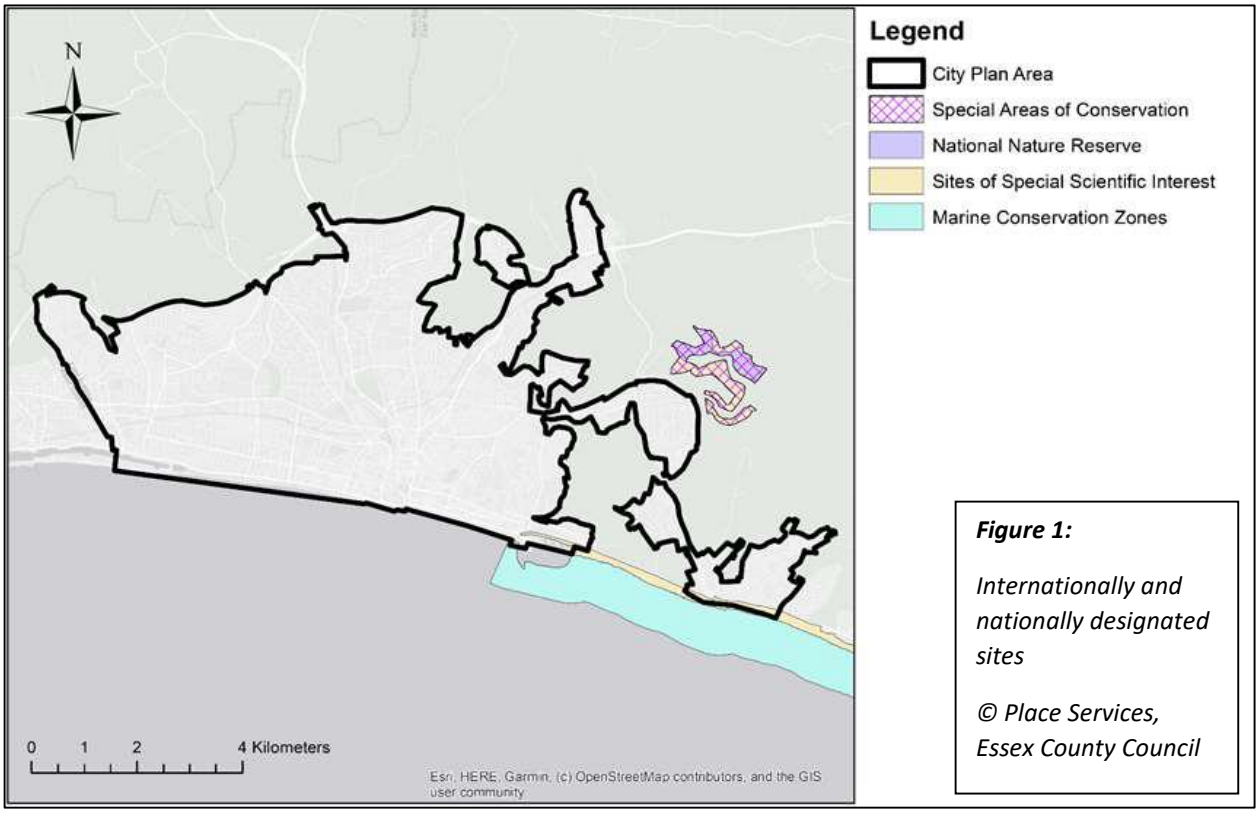


Figure 1:

Internationally and nationally designated sites

© Place Services, Essex County Council

2.11 Habitats (European) Sites (Figure 1)

Special Protection Areas (SPA) and Special Areas of Conservation (SAC) are sites of international importance which form the UK's national site network protected by The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations).

Ramsar Sites are wetlands of international importance that have been designated under the criteria of the international Ramsar Convention on Wetlands; these are also protected under the Habitats Regulations. Collectively, these sites are now known as Habitats Sites as defined by the NPPF.

There is one Habitats Site within the city's administrative area - Castle Hill SAC; this lies within the South Downs National Park (SDNP) and is therefore not directly within the Brighton and Hove Local Planning Authority (LPA) area (however does require indirect impacts to be assessed). A further four Habitats sites are within 20km of the council's administrative boundary and therefore any potential impacts of certain types of development may need to be considered (see Key Biodiversity Matter 2).

2.12 Sites of Special Scientific Interest (Figure 1)

Sites of Special Scientific Interest (SSSI) are designated due to the special interest of their flora, fauna, geological, geomorphological or physiographical features.

There are two SSSIs within the city's administrative area. Castle Hill SSSI is located entirely within the SDNP and the Brighton to Newhaven Cliffs is located partially within the Brighton and Hove LPA boundary.

- Castle Hill - designated for its chalk grassland habitat and the presence of rare plants and invertebrates. Part of the designation overlaps with the SAC designation; part of the site is a National Nature Reserve.
- Brighton to Newhaven Cliffs - designated primarily for geological reasons, but also for the presence of rare and uncommon plants in chalk grassland habitat, for its breeding seabirds and for invertebrates.

Further information on Habitats Sites and SSSIs can be obtained through the Multi-Agency Geographic Information for the Countryside including boundaries and links to site descriptions. (See Key Biodiversity Matter 3).

2.13 Biosphere Reserve (Figure 2)

UNESCO designated the Brighton and Lewes Downs Biosphere Reserve in 2014, covering the chalk block between the Adur Estuary in the west and the River Ouse in the east. The designation is based on a core area made up of SSSIs surrounded by a buffer zone and a transition area. The core area is to be protected, the buffer zone should only be used for activities compatible with sound ecological practices, and the transition area is where stakeholders should seek to manage and sustainably develop the area's resources. Most of the city falls within the transition area.

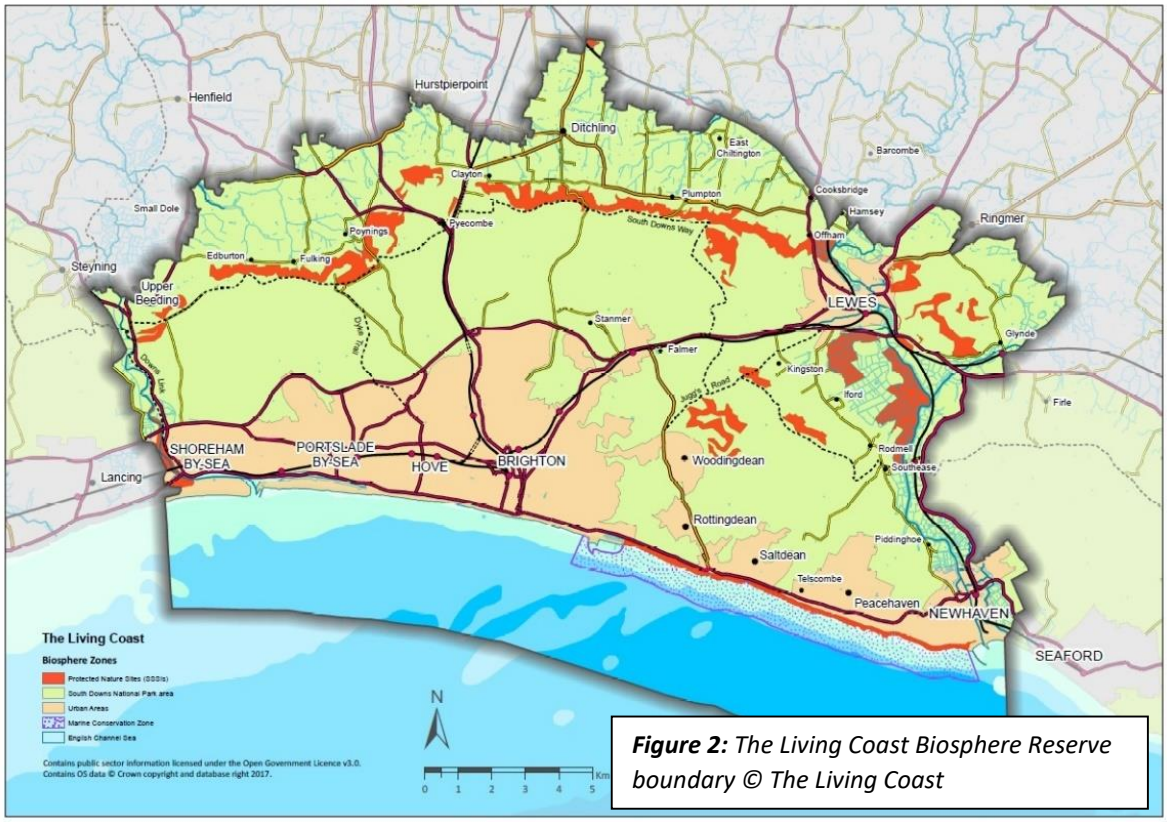


Figure 2: *The Living Coast Biosphere Reserve boundary © The Living Coast*

The council is the lead partner for The Living Coast Biosphere. Planning proposals can support the delivery of the Biosphere objectives. Key themes for our Biosphere Region are to connect people and nature by bringing the Downs into the towns through creating and enhancing areas of urban greenspace, increasing biodiversity and access to nature, utilising local downland flora to support pollinators and protecting and improving the quality of groundwater in the Brighton chalk aquifer.

2.14 Marine Conservation Zones (Figure 1)

The Beachy Head West Marine Conservation Zone (MCZ) covers an area of about a kilometre wide eastward from Brighton Marina to Beachy Head. It extends from the mean high-water line to half a nautical mile seaward. The site is designated for its marine chalk habitats, with the specialised communities of seaweeds and animals they support, and for the presence of Native Oyster and Short-snouted Seahorse. (See Key Biodiversity Matter 5).

2.15 National Nature Reserves (Figure 1)

National Nature Reserves (NNR) were established to protect some of our most important habitats, species and geology, and to provide 'outdoor laboratories' for research. There is one NNR within Brighton and Hove administrative area, situated entirely within the South Downs National Park: Castle Hill, part of which is also a SAC and SSSI. (See Key Biodiversity Matter 3)

2.16 Local Nature Reserves (Figure 3)

Local Nature Reserves (LNR) are statutorily protected local sites, designated by local authorities for their special natural interest, educational value and the access to nature that they offer. There are eight LNRs within Brighton and Hove; six are located either wholly or partially within the Brighton and Hove LPA boundary, and two are located entirely within the South Downs National Park. Site boundaries are mapped on Multi-Agency Geographic Information for the Countryside. (See Key Biodiversity Matter 3).

More information on individual NNRs and LNRs are available on the council website and Natural England Open Data Mapping.

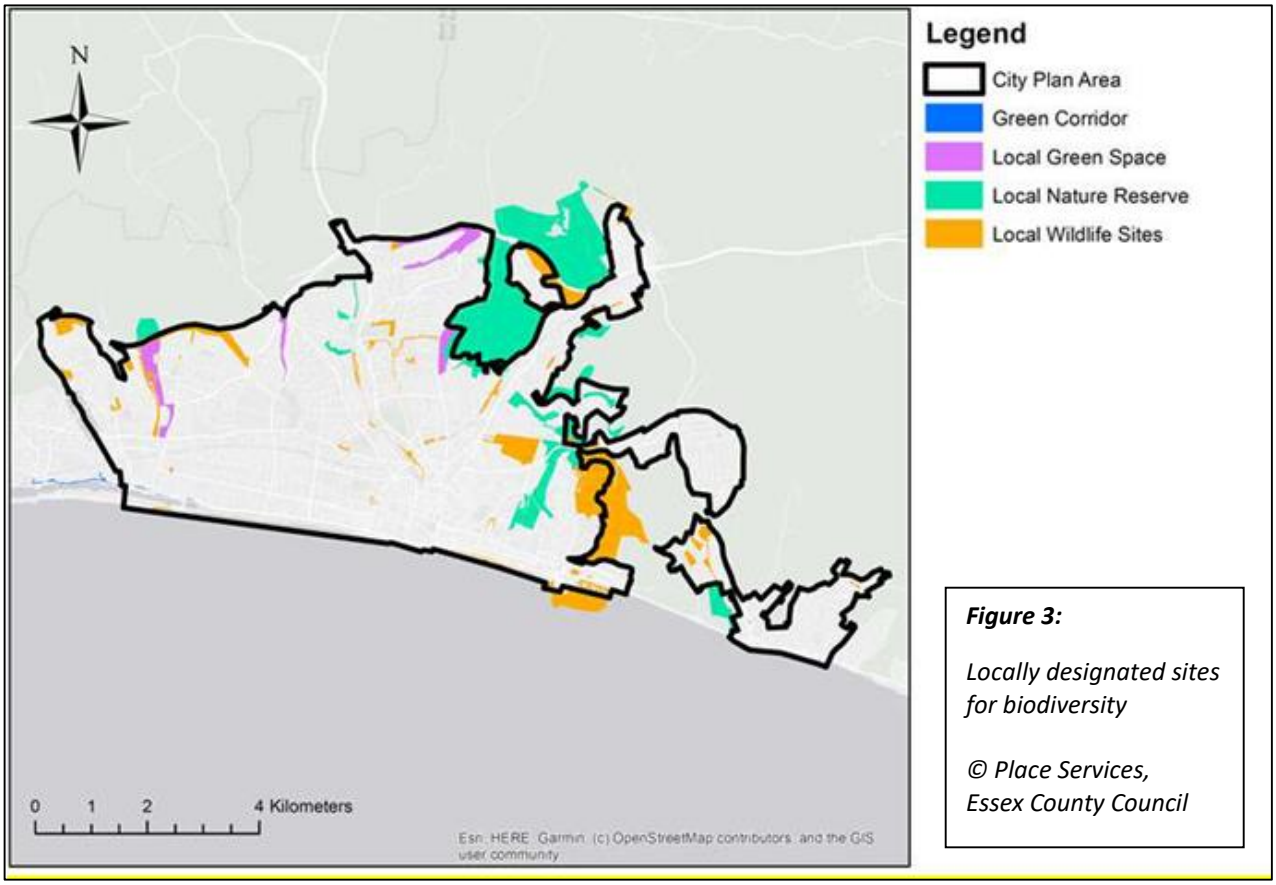


Figure 3:

Locally designated sites for biodiversity

© Place Services, Essex County Council

Non-statutory designated sites

2.17 Local Wildlife Sites

Local Wildlife Sites (LWS) are non-statutory sites designated for their importance for nature conservation. These are identified against a set of locally developed criteria covering both habitats and species. Some LWS may be of greater than county level importance. The NPPF requires these sites to be identified, mapped and safeguarded through the Local Plan system and acknowledges the role they play as part of wider ecological networks. As well as supporting Priority habitats within a given area, LWS may provide a focus for the appropriate location of habitat restoration or enhancement linked to the Local Nature Recovery Network, which is a requirement under the Environment Act.

2.18 Marine Sites of Nature Conservation Interest

Marine Sites of Nature Conservation Interest (SNCI) are identified for the special interest of their marine habitats, the fauna and flora, or for unusual geological and geomorphological features. Information on Marine SNCIs, including the Brighton Marina LWS, is available on the Sussex marine environment interactive map.

Information about the 51 Local Wildlife Sites designated within Brighton and Hove can be obtained from Sussex Biodiversity Record Centre. Their boundaries are also shown on the Brighton & Hove City Plan Policies Map.

2.2 Protected, notable and Priority Species and Habitats

2.21 Protected species

These species are protected by law. The presence of legally protected species and the extent to which they could be impacted is a material consideration in the determination of planning applications. Populations of many species are dynamic, therefore existing records can only be used as a guide to likely presence and should be tested by appropriate field survey work based on current best practice including expiration of validity. Local records of protected species are available from the Sussex Biodiversity Record Centre.

European Protected Species with known populations within the city are:

- 13 species of Bats with Serotine, Noctule, Common Pipistrelle and Brown Long-eared Bat species of bat known to breed in Brighton and Hove;
- Dormouse;
- Great Crested Newt;
- Floating Water Plantain and Early Gentian, and
- Long-finned Pilot Whale, Harbour Porpoise, Bottle-nosed Dolphin

Torpid Dormouse © Hamish Jackson

Female Slow worm © Kim Dawson

2.22 Priority Species

Priority species are those identified as being the most threatened and in need of conservation action. They are included within the Section 41 list prepared under the Natural Environment and Rural Communities Act. (See Annex 3 – Table 3.1)

Over 200 UK Priority Species are found in the city, including Common Toad, Skylark, House Sparrow, Starling, Brown Hare, Red Star-thistle, Hornet Robberfly and Hedgehog, alongside a range of lesser-known invertebrates and plants.

Sussex Biodiversity Record Centre provides records of Priority Species within its data search.

Hedgehog © Pixabay

Priority invertebrate species may be poorly recorded, but the identification of habitats and features of likely value to invertebrates, such as brownfield sites, will trigger the need for specialist survey.

A map of B-Lines has been created by Buglife, the national invertebrate conservation charity, as a strategic initiative to target habitat creation and connectivity for pollinators. This has also mapped Important Invertebrate Areas, landscapes of particular significance for invertebrate populations where a greater focus on impacts to favourable habitat may be required. Some parts of the city fall within the South Downs Important Invertebrate Area.

Brighton and Hove contains the National Elm Collection which includes large numbers of elm trees on streets as well as parks such as Preston Park and The Level. These sites include many species of elm trees including English, Jersey and Cornish Elms. They are also home to a colony of elm-dependent White-letter Hairstreak butterflies, a Priority Species which has declined in areas suffering with Elm Disease. This endangered species lives mainly in the treetops, relying on elm trees for food.

A green space in Brighton with Elm trees

© The Living Coast

2.23 Notable species

The term "notable" has a specific meaning relating to assessing and monitoring the distribution of species and is typically used to understand distribution trends with the use of additional criteria e.g., Red Data Book (Red List), providing status in a global or national context, and alongside the International Union for Conservation of Nature (IUCN) rarity levels.

Notable habitats and species are not legally protected but are considered to be of local importance and conservation concern of relevance for biodiversity consideration.

Notable species includes those identified as being of principal importance and are included within the Section 41 list prepared under the Natural Environment and Rural Communities Act, Priority species and those listed on the Sussex Rare Species Inventory. Sussex Biodiversity Record Centre has provided an indication of the status for each Priority or notable species known to occur in Brighton and Hove, and this is shown in the legal/policy protection columns in the tables within Annex 3.

Some notable species are not listed as Priority species. Notable species locally, that are not Priority species, include swift, house martin and glow-worm (See Annex 3 -Table 3.2).

2.24 Priority habitats

Priority habitats are those identified as being the most threatened and therefore in need of conservation action and are of principal importance for the conservation of biodiversity. These are included within the Section 41 list prepared under the Natural Environment and Rural Communities Act. (See Annex 3 – Table 3.3)

Lowland Calcareous Grassland is present on the downland to the north of the city and extends into it, largely in small parcels amongst agricultural and urban land uses. Scrub forms an important component of this habitat, especially for invertebrates. The downland areas also feature *Ponds, Hedgerows* and some *Lowland Mixed Deciduous Woodland*, which is mostly present in small blocks throughout the city. *Ancient Woodland* refers to a woodland which has existed continuously since at least 1600. Stanmer Park supports the majority of the city's *Ancient Woodland*, including *Veteran Trees*, although there are several other sites in outlying areas. *Veteran trees* can also be found across the city. *Arable Field Margins* is a significant Priority habitat on the downland, supporting rare arable weeds such as Shepherds Needle (*Scandix pecten-veneris*) and Cornflower (*Centaurea cyanus*).

Within the urban commons of the city *Open mosaic habitat on previously developed land Priority habitat* is likely to be present. Typically located on brownfield sites which have been previously disturbed and left for a period of time to revegetate, they can support a wide range of terrestrial and aquatic habitats, rare and scarce invertebrates as well as lichens, plants, birds, reptiles and amphibians of conservation concern.

There is also some limited representation of *Traditional Orchards* and *Wood Pasture and Parkland* in the city.

On the southern edge of the city is a complex of coastal and marine Priority habitats, including:

- *Maritime Cliff and Slopes* and some *Coastal Vegetated Shingle*
- *Saline Lagoons, Intertidal Mudflats, Intertidal Chalk and Intertidal Underboulder Communities*
- *Fragile Sponge and Anthozoan Communities on Subtidal Rocky Habitats, Sub-tidal Chalk, Sub-tidal Sands and Gravels,* and *Sheltered Muddy Gravels* below the low tide mark

Natural England maintains inventories of Priority habitats, which can be viewed on the Multi-Agency Geographic Information for the Countryside map. These inventories should only be viewed as provisional, with the presence or absence of Priority habitats to be confirmed by up-to-date field survey results, with reference to the published UK Priority habitat descriptions.

Sussex Biodiversity Record Centre also maintains an inventory of Priority habitat incorporating local knowledge and biological data. (See Key Biodiversity Matter 4).

2.3 Sussex rare species

The nature conservation status of species has been determined by the assessment of populations against threat and rarity criteria, often at local, national and international levels. Species with higher rarity and threat status are generally known as Red List species. Swift, greenfinch and house martin were added to Red Lists in December 2021. The Sussex Biodiversity Record Centre maintains the Sussex Rare Species Inventory, which includes all national Red List species along with those that are considered rare in Sussex according to stated criteria (see Annex 3 - Tables 3.1 and 3.2).

2.4 Invasive non-native species

Vigorous or invasive non-native plant species can impact negatively upon biodiversity by out-competing native flora, limiting the available feeding and cover areas and becoming monocultural habitat. Examples include Japanese knotweed, some cotoneaster species and Wilson's honeysuckle on the Downs.

Landscaping schemes should look to avoid invasive non-native species listed and known to be a local problem, opting to include locally appropriate and beneficial species of biodiversity value. Terrestrial species of particular concern include:

- Cotoneaster species
- Japanese Knotweed (*Fallopia japonica*),
- Indian Balsam (*Impatiens glandulifera*),
- Giant Hogweed (*Heracleum mantegazzianum*),

More information is available on the webpages of the GB Non-native Species Secretariat.

It is an offence to spread, or cause to grow, certain plant species listed on Schedule 9 of the Wildlife and Countryside Act, 1981 as amended. It should be noted that where proposals could result in the spread of non-native invasive plant species, suitable measures will need to be agreed and/or undertaken to control them.

3. Key legislation for biodiversity

Applicants must demonstrate that proposals are compliant with all relevant legislation regarding the protection of wildlife and habitats and should ensure that they receive the necessary professional advice to be able to do so. Key legislation is summarised in Table 1. Further detail is provided in Annex 1.

Table 1: Key legislation

Legislation	**Key Information**
Wildlife and Countryside Act 1981 (as amended)	The primary mechanism for the protection of all wildlife in the UK and includes schedules that set out those species with additional levels of protection. It also provides the basis for the identification of sites of national importance for nature conservation, Sites of Special Scientific Interest.
Natural Environment and Rural Communities Act 2006	Section 40 (as amended by the Environment Act) places a duty on public bodies in England to conserve and enhance biodiversity. It requires local authorities to have regard to the purpose of conserving and enhancing biodiversity in a manner that is consistent with the exercise of their normal functions such as policy and decision-making. Section 41 requires the Secretary of State to publish and maintain lists of species and types of habitats to be of "principal importance" for the purposes of conserving biodiversity, known as Priority habitats and species.
Conservation of Habitats and Species Regulations 2017 (as amended)	Often referred to as the Habitats Regulations, these provide protection for designated sites, habitats and species considered to be of international importance, including the designation of Habitats Sites and European Protected Species.
Environment Act 2021	Enacted in November 2021 with a target to halt a decline in the abundance of species. Schedule 14 makes provision for biodiversity gain to be a condition of planning permission setting out key requirements in relation to biodiversity and development management through amendments to the Town and Country Planning Act 1990 as: mandatory delivery of minimum 10% Biodiversity Net Gain (BNG) above the pre-development value of the site unless exempt; biodiversity value and BNG to be measured using the Defra Biodiversity Metric by a suitably qualified and experienced ecologist; submission of a Biodiversity Gain Plan with planning applications; BNG to be provided on-site, off-site or through a statutory biodiversity credit scheme; habitat secured for at least 30 years via planning obligations or conservation covenants. It is anticipated there will be a transition period of two years before the requirements for BNG become mandatory. Full details of all requirements will be provided through secondary legislation.
Protection of Badgers Act 1992	This Act refers specifically to Badgers, making it an offence to kill, injure or take a Badger, or to damage or interfere with a sett unless a licence is obtained from a statutory authority.
Hedgerow Regulations 1997	Although outside of the development management process, these Regulations provide a convenient framework for the identification of hedgerows with importance for wildlife, landscape and heritage. For projects that do not require planning consent, the requirements of the Regulations need to be met to permit the removal of any hedgerow or hedgerow section, except if it forms a curtilage to a property.
Crime and Disorder Act 1998	Section 17 states that all relevant authorities, including city, town and parish councils, have a duty to consider the impact of all their functions and decisions on crime and disorder in their local area. To prevent wildlife crime, planning decisions, including permitted development and listed building consents, need to consider how to avoid any action which contravenes current legislation governing the protection of wild animals and plants.

4. Planning Policy and Strategies

The following sections outline and summarise current national and local planning policy in relation to conserving and enhancing biodiversity.

4.1 National policy and guidance

The National Planning Policy Framework (NPPF) promotes sustainable, well-designed development. Within this aim, it seeks to conserve and enhance the natural environment and ensure that biodiversity and appropriate landscaping are fully integrated into new developments to create accessible green spaces for wildlife and people, to contribute to a high quality natural and built environment, and to contribute to a better quality of life. Table 2 summarises the key paragraphs.

Table 2: NPPF requirements

Paragraph 153	Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures.
Paragraph 174	Planning policies should contribute to and enhance the natural and local environment by, amongst other things: • protecting and enhancing sites of biodiversity value in a manner commensurate with their statutory status or identified quality in the development plan; • minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
Paragraph 175	To protect and enhance biodiversity and geodiversity, plans should: • Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping-stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and promote the conservation, restoration and enhancement of Priority habitats, ecological networks and the protection and recovery of Priority species; and • identify and pursue opportunities for securing measurable net gains for biodiversity.
Paragraph 180	Sets out the mitigation hierarchy for decision making: • in making planning decisions, a hierarchical approach should be followed, so that significant harm should be avoided, but if it can't be avoided must be adequately mitigated, or as a last resort compensated for.
Paragraph 180	Includes advice on irreplaceable habitats, such that development resulting in their loss or deterioration should be refused unless there are exceptional circumstances and where a suitable compensation strategy has been produced.

Additional guidance on biodiversity and planning is provided on the Government's Planning Practice Guidance webpages, including links to Natural England's standing advice on protected sites and species.

Government Circular 06/2005 Biodiversity and geological conservation

This provides further guidance on the law relating to planning and nature conservation. It clarifies the need for information submitted in support of planning applications to be sufficient to provide LPAs with certainty of likely impacts including whether mitigation measures can be secured, prior to determination. It gives weight to the conservation of biodiversity within the planning process to avoid decisions being challenged.

4.2 Local planning policy framework

4.21 City Plan Parts 1 and 2

City Plan Parts 1 and 2 contain many policies relevant to biodiversity and nature conservation (see Annex 2). The key policies are CPP1 CP10 Biodiversity and CPP2 DM37 Green Infrastructure and Nature Conservation.

Policy CP10 Biodiversity

This policy sets the overarching strategy relating to the conservation, protection and enhancement of biodiversity. The policy takes a strategic approach to improving biodiversity within the South Downs Way Ahead Nature Improvement Area (NIA) in the city; this incorporates the Brighton and Hove Green Network and is designated on the City Plan Policies Map. The policy also seeks to ensure all development conserves existing biodiversity, provides biodiversity net gains wherever possible, and contributes towards ecosystem services.

Policy DM37 Green Infrastructure and Nature Conservation

This policy requires development to contribute towards the network of green infrastructure, avoid adverse impacts on biodiversity, and seeks to conserve and enhance biodiversity and nature conservation features. The policy also seeks to ensure development achieves measurable biodiversity net gains. All proposals must accord with the mitigation hierarchy and include measures to avoid or prevent harmful effects where required.

The policy requires the following assessments for designated sites:

- International Sites - Habitats Regulations Assessment (HRA) screening/Appropriate Assessment
- National Sites - Environmental Impact Assessment (EIA) screening/EIA; and/or MCZ assessment
- Local sites - Ecological Impact Assessment

4.22 East Sussex, South Downs and Brighton & Hove Waste and Minerals Local Plan

The Waste & Minerals Plan sets out the vision, objectives and strategy for sustainable waste development and minerals production in the area. The policy relating to biodiversity is Policy WMP27 Environment and Environmental Enhancement. The Plan is currently under review and this policy is proposed to be replaced by Policy RD1; this replacement policy proposes to add a reference to biodiversity net gain.

4.23 Area Action Plans and Neighbourhood Plans

Policies in the Shoreham Harbour Joint Area Action Plan are applicable to development within the Shoreham Harbour area of the city alongside the City Plan policies referred to above. Policy SH7 Natural Environment, Biodiversity and Green Infrastructure is the key policy of relevance to biodiversity.

There are currently five neighbourhood areas designated in Brighton and Hove; all are at various stages of preparation. Information about the areas designated for Neighbourhood Planning and the status of the plans can be found on the council website.

4.24 Supplementary Planning Documents, Planning Advice Notes and Special Guidance

Other SPDs should be read alongside this SPD to ensure cross compliance and integration. The most relevant are SPD06 Trees and Development Sites; SPD15 Toad's Hole Valley; SPD16 Sustainable Drainage; and SPD17 Urban Design Framework, In addition, the council also has PAN06 Food Growing and Development and has produced Special Guidance A: Swift Boxes and Bricks for New Developments.

4.25 Marine Plan for the South East

The Marine Management Organisation has prepared a Marine Plan for the south coast of England which seeks to manage the sustainable development of marine industries such as wind farms, shipping, marine aggregates and fishing alongside the need to conserve and protect marine species and habitats.

4.3 Local Biodiversity Strategies

4.31 The Living Coast Biosphere Management Strategy

The Living Coast Management Strategy sets out how The Living Coast Partnership will deliver core themes to support the objectives of the global biosphere programme: to conserve nature and culture; support sustainable socio-economic development; and enable environmental engagement, research and learning.

4.32 Future Local Nature Recovery Strategy

The council is working with the Sussex Nature Partnership (SxNP) to develop local habitat maps which will, in due course, form the basis of a Local Nature Recovery Strategy (LNRS) and local Nature Recovery Network (NRN). The council will also work to identify strategic and other sites for the off-site delivery of biodiversity net gain and nature-based solutions, which will help deliver the nature recovery strategy.

Biodiversity Opportunity Areas (BOAs) are likely to form the basis of the future local NRN. BOAs were identified in 2009 by the Sussex Biodiversity Partnership. BOAs represent areas where habitat enhancement, restoration and creation will have the most benefit in enhancing connectivity and improving the resilience of species populations. They may also be target areas for nature recovery and off-site biodiversity net gain where it can't be achieved on site. BOAs have already been identified across Sussex; one is situated entirely within the city and four are partly within the city (Figure 4). BOAs take in concentrations of designated sites, along with associated Priority habitats.

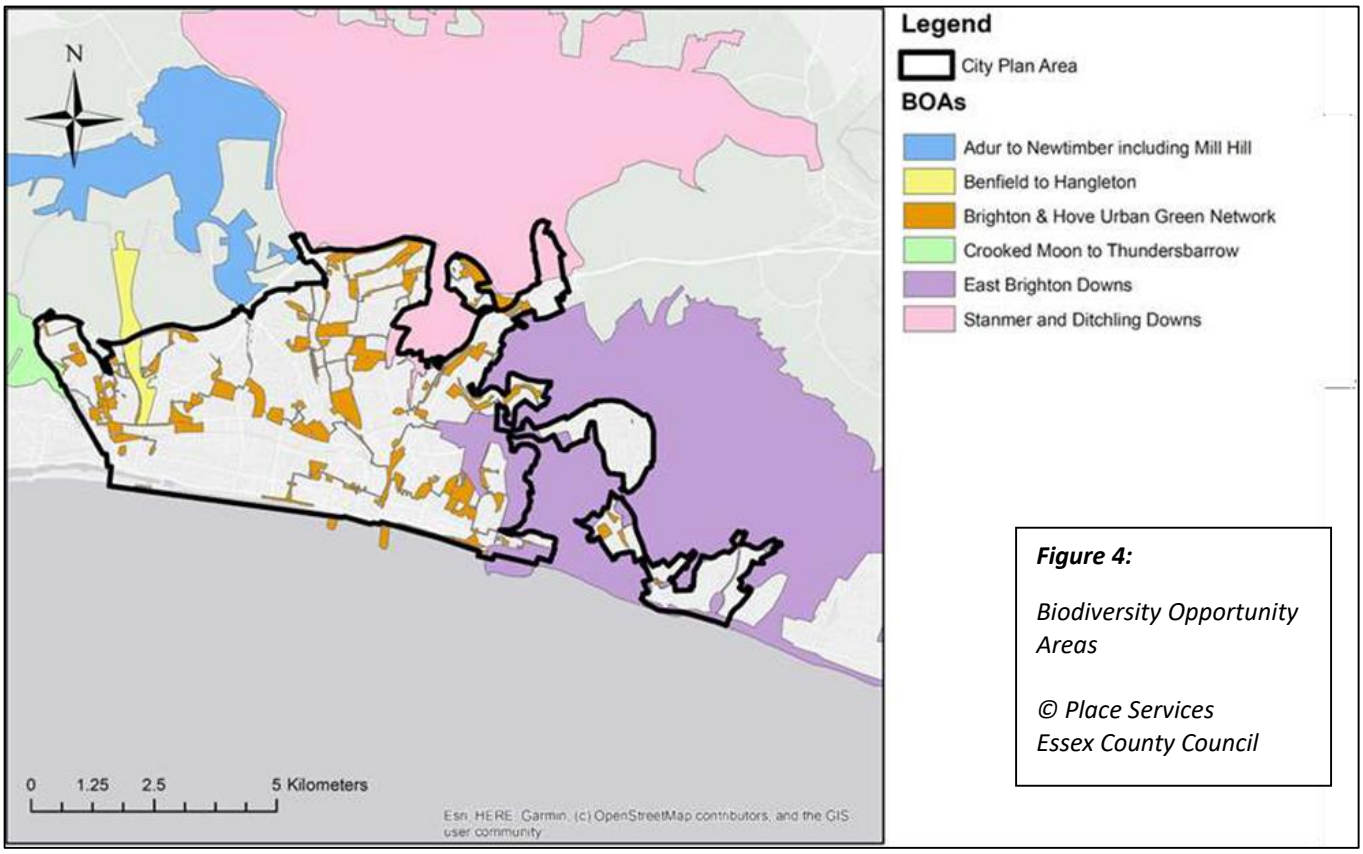


Figure 4:

Biodiversity Opportunity Areas

© Place Services
Essex County Council

The main habitat characteristics of the five local BOAs are indicated in the table below.

Adur to Newtimber including Mill Hill	Chalk grassland, floodplain, grassland, and woodland
Brighton and Hove Urban Green Network	Chalk grassland, woodland and parkland
Benfield to Hangleton	Chalk grassland and woodland
Stanmer and Ditchling Downs	Chalk grassland, heath, orchards, woodland and parkland
East Brighton Downs	Chalk grassland, acid grassland, orchards, woodland, parkland and coastal habitats

4.33 Natural Capital Investment Strategy

The Sussex Nature Partnership have produced the Natural Capital Investment Strategy (2019) and associated asset and risk register and *Environmental Benefits from Nature* tool. The Strategy sets out the approach to directing investment in nature and sets out the rationale for using a natural capital approach. These documents promote the use of landscape carbon metrics (outside of woodland creation) and assessment of ecosystem services of developments in Sussex including Brighton and Hove.

Natural Capital at Risk in Sussex comprises habitats that are not adequately protected under existing mechanisms; are fragile or vulnerable and/or already highly fragmented; may be of particular significance in a Sussex context; or are irreplaceable or not easily re-created. The habitat types that fall into this category in Brighton and Hove are: vegetated shingle, woodland and species-rich grassland.

Round headed Rampion on Beacon Hill Nature Reserve © The Living Coast

5. Overarching principles and local biodiversity matters

The overarching aims of ecological work used to inform the planning process are to minimise harm and to maximise benefits for biodiversity resulting from development enabling effective decision-making compliant with legislative and policy drivers. The generally accepted way of doing this, now embedded within the planning and legal systems, is to follow the "mitigation hierarchy" and to achieve a mandatory minimum 10% biodiversity net gains. These key principles and priorities are detailed below.

5.1 The Mitigation Hierarchy

The mitigation hierarchy, as set out in the NPPF paragraph 180 and ecological best practice guidance (BS42020:2013), aims to prevent harm and conserve and enhance biodiversity. In accordance with the NPPF, if significant harm to biodiversity cannot be avoided, adequately mitigated, or as a last resort, compensated for, the NPPF states that planning permission should be refused.

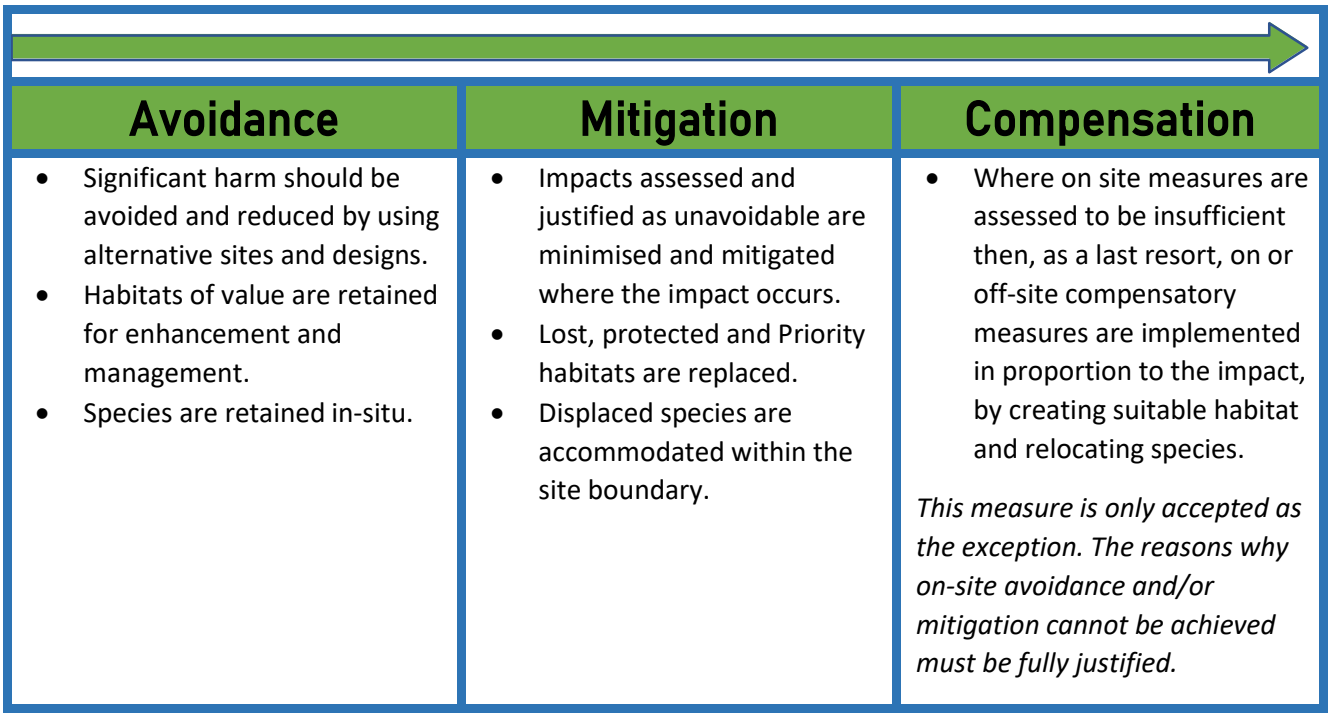


Figure 5: *The Mitigation Hierarchy*

Applicants must demonstrate that the design of their proposals complies with the mitigation hierarchy. The approach to following the mitigation hierarchy should be informed by up-to-date survey and assessment of the ecological value of the habitats and species likely to be affected, aligned to best practice standards as set out in BS42020:2013 Biodiversity – Code of practice for planning and development. This standard identifies the ecological data required and considerations for its assessment, and its use in the design of mitigation measures. (See Section 7 for further details).

Compliance with this standard is important to demonstrate the validity of the ecological information submitted with a planning application. Any deviations from this British Standard will need to be fully justified and may be challenged by the council or external consultees, potentially leading to delays in determination and / or refusal.

5.2 Biodiversity Net Gain

Biodiversity Net Gain (BNG) is an approach to development that aims to leave the natural environment in a measurably better state than it was beforehand. NPPF paragraphs 174d and 180d refer to providing or securing net gains for biodiversity through development; the Environment Act 2021 mandates measurable net gain of at least 10%; and Policies CP10 and DM37 seek to ensure all development provides net gains where possible, with DM37 requiring these to be measurable.

BNG does not replace existing protections, for example, for statutory designated sites and protected species, and does not apply to irreplaceable habitats. In addition, the introduction of BNG does not replace or undermine the mitigation hierarchy as the primary principle for the consideration of biodiversity within development. BNG is additional to the mitigation hierarchy and only applies once impacts to biodiversity have been avoided, mitigated and compensated for (Figure 6). Where there are no anticipated impacts, development should still secure BNG.

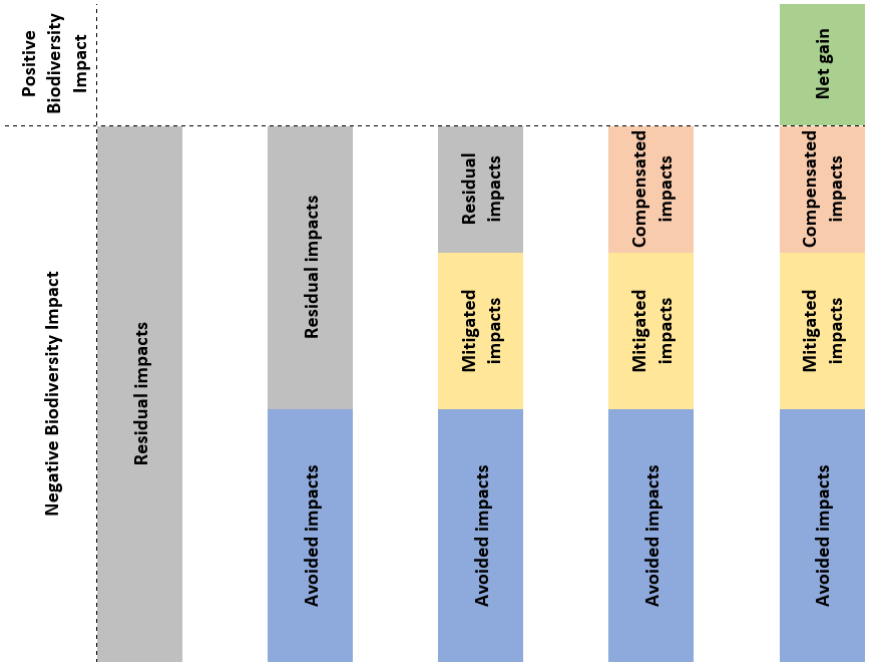


Figure 6: *Relationship between the Mitigation Hierarchy and BNG*

Demonstrating BNG

Demonstrating BNG requires an approach to measuring biodiversity. A **Biodiversity Metric** has been produced by Defra as a tool to measure biodiversity. This is a habitat-based approach to determining a proxy biodiversity value and enables the assessment of changes in biodiversity value (losses or gains) brought about by development. (See Section 7 for further details).

Pre-development biodiversity value must be calculated before any site clearance or other habitat management work has taken place.

Achieving BNG

Opportunities are likely to exist within most development proposals to retain, create and manage habitats for biodiversity and provide BNG on-site. For example, wildlife habitats within landscaping or open space, or the inclusion of street trees within developments.

BNG should ideally be achieved on-site with retained and enhanced habitats, appropriate buffers and creation of habitats to increase connectivity for wildlife. Where BNG cannot be fully achieved on-site, off-site BNG can be explored having regard to any emerging Local Nature Recovery Strategy and provided in local strategic sites wherever possible, preferably within Brighton and Hove or within a Sussex Nature Recovery Network.

5.3 Local biodiversity matters

This section identifies a range of key biodiversity matters and describes how these need to be considered when identifying sites for development and developing design proposals.

Key Biodiversity Matter 1 – Protection of irreplaceable habitats

Irreplaceable habitats are defined in the NPPF as "habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity." The loss of these habitats cannot be compensated for by gains elsewhere and therefore, as set out in the NPPF, development should avoid any loss or deterioration of such habitats. Examples of irreplaceable habitats within the city include ancient woodland and veteran trees.

Key Biodiversity Matter 2 - Habitats Regulations Assessment

Where a Habitats Site, such as Castle Hill Special Area of Conservation, could be affected either directly or indirectly by development, a Habitats Regulations Assessment screening must be undertaken by the council as the competent authority. If the HRA screening does not rule out likely significant effects on the site, either alone or in combination with other projects, prior to the consideration of mitigation measures, then an Appropriate Assessment must be undertaken. The Appropriate Assessment identifies the interest features of the site (such as birds, plants or habitats), how these could be impacted, assesses whether the proposed project could have an adverse effect on the integrity of the Habitats Site (either alone or in-combination with other projects), and finally how this could be mitigated to meet the Habitats Regulations "integrity" test. If a development is likely to have an adverse effect on the integrity of a Habitats Site, then it can only go ahead for imperative reasons of over-riding public interest (IROPI).

Any Habitats Regulations Assessments undertaken by the council are sent to Natural England for a formal consultation response before any decision can be issued. It is expected that applicants should provide sufficient information to inform a Habitats Regulations Assessment.

Key Biodiversity Matter 3 – Recreational pressure on designated sites including SSSIs

Housing development located in proximity to any designated site of nature conservation value has potential to have recreational impacts, such as disturbance to wildlife or vegetation trampling, arising from increased visitation, dog-walking and use. Recreational pressure can, to some degree, be mitigated through appropriate alternative open space provision or improvements.

In accordance with the NPPF, development should avoid impacts on SSSIs, including recreational impacts. Impact Risk Zones have been developed by Natural England to make an initial assessment of the potential risks to SSSIs, available on the Multi-Agency Geographic Information for the Countryside. Where a development has the potential to result in recreational impacts on an SSSI, developers may need to provide an assessment of recreational pressure effects. Developers in this situation should seek further advice on this issue from Natural England's Discretionary Advice Service.

Natural England are a statutory consultee for all development likely to have an impact on SSSIs. Where there is potential for a development to have an impact on a SSSI, an Environmental Impact Assessment (EIA) screening will be required.

Key Biodiversity Matter 4 – Priority habitats

Proposals that contain or may affect a Priority habitat are required to include avoidance measures to protect any existing value and, where possible, improve their condition by appropriate enhancement or management measures. Management will need to be sustainable for the long-term, with clear objectives guided by the site's existing habitat features and species, as appropriate to the location and environmental conditions.

Key Biodiversity Matter 5 - Conservation of the marine environment

The biodiversity of the city also extends to the marine environment. The inner harbour at Brighton Marina is designated as the Brighton Marina Local Wildlife Site, a saline lagoon (Priority habitat) with characteristic saline lagoon species; the Beachy Head West Marine Conservation Zone covers an area of sea eastward from Brighton Marina to Beachy Head, designated for marine chalk habitats and the species they support.

Surfers near Brighton Marina © Living Coast

Planning applications for activities that are capable of affecting the features of the MCZ, directly or indirectly, will need to include a consideration of the significance of that risk. Developments which may result in adverse impacts on the MCZ, such as a coastal defence project or SuDS scheme releasing wastewater into the marine environment, will need to provide sufficient information to the council so that a MCZ Assessment can be undertaken. This assesses the likely impacts on the designated features and conservation objectives of the MCZ and is integrated into the marine licence decision making procedures by the Marine Management Organisation.

Key Biodiversity Matter 6 – Wildlife sensitive lighting

Many species are sensitive to light pollution including birds, dormice, insects, bats and badgers. The introduction of artificial light might therefore mean such species are disturbed and/or discouraged from using their breeding and resting places, established flyways or foraging areas. Such disturbance can constitute an offence under relevant wildlife legislation. The design of external lighting schemes therefore needs to be sensitive to the needs of wildlife in the city, be designed to avoid impacts on any sensitive receptors identified, and retain dark corridors for habitats on, adjacent to or near the development site.

Where species are likely to be present and affected, the council will use a condition to secure a wildlife sensitive lighting scheme. This will identify those features on site that are particularly sensitive, e.g. important tree lines or hedgerows which could be used by foraging species and should identify whether light spillage could cause disturbance to these routes, and show how and where external lighting will be installed so that it can be clearly demonstrated that lit areas will not disturb or prevent wildlife from using these features. Guidance Note 08/18 Bats and artificial lighting in the UK (Institute of Lighting Professionals, 2018) provides useful information for sensitive wildlife.

Key Biodiversity Matter 7 – Species Conservation Strategies and Species Licenses

Species Conservation Strategies
Species Conservation Strategies are a new mechanism being introduced through the Environment Act to safeguard the future of particular species at risk. They will provide a strategic approach to protecting species and find better ways to comply with existing legal obligations to protect species at risk. The strategy builds on the district level licensing approach for great crested newts with other Species Conservation Strategies likely to include species of relevance locally such as Dormouse and bats.

Developers will need to be able to demonstrate that a Species Conservation Strategy has been taken into account, where relevant.

Species Licenses and District-Licensing
Developers have a legal duty to protect various species. A license may be required from Natural England or Defra if a development will result in disturbance or removal of certain species or habitats that would otherwise be unlawful. To obtain a license for European Protected Species, an applicant will need to clearly demonstrate there are imperative reasons of overriding public interest; there are no alternatives; and that a favourable conservation status of the species will be maintained.

Species with known populations locally that would require a license include Badgers, Dormouse, Bats and Great Crested Newts.

Where ponds and therefore Great Crested Newts are likely to be present on or within 500m of a site**,** applicants will need to consider their approach to avoiding impacts to meet their legal requirements. For Great Crested Newts, an alternative option to an individual site-based ecological survey and assessment is available through the District Licensing Scheme; this provides a year-round option for applicants to mitigate predicted impacts on Great Crested Newt populations and can provide certainty of costs and timescales. If an applicant joins the District Licensing scheme, they do not need to carry out their own surveys or plan and carry out mitigation work for Great Crested Newt. However, evidence of enrolment in the scheme must be submitted with the planning application. The District Licensing Scheme is available to all developments in Brighton and Hove where Great Crested Newt impacts are likely and is delivered by NatureSpace on behalf of the council. Full details of the scheme are available on the NatureSpace website. Figure 7 shows impact risk zones based on habitat suitability for Great Crested Newt.

If developers do not enter the NatureSpace scheme, proposals will need to meet the Government's Standing Advice for Great Crested Newt. Mitigation, such as a precautionary approach to site clearance will still be required for all developments, including those supported by the Great Crested Newt District Licensing scheme.

Other district licensing schemes may come forward in the future for other species.

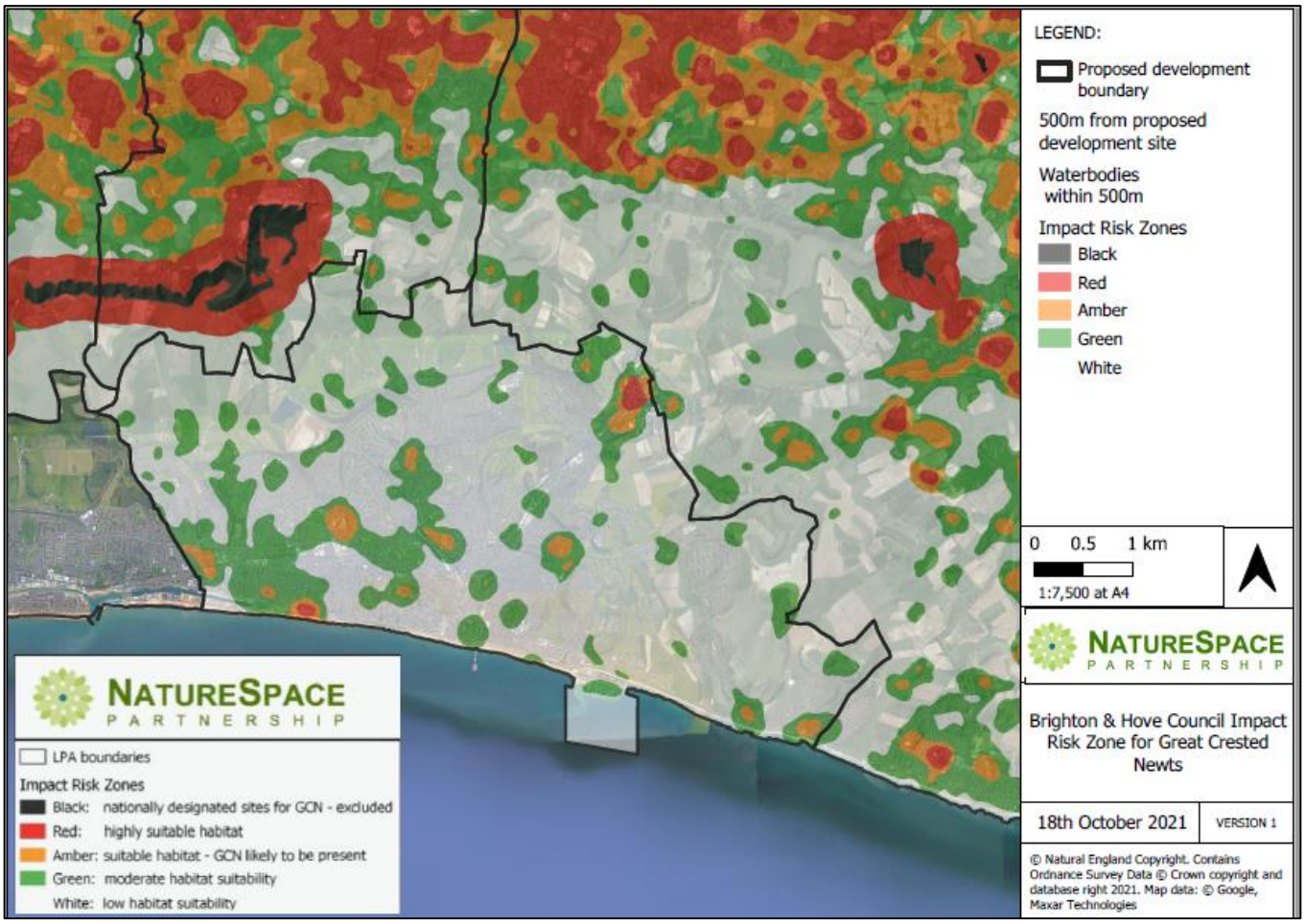


Figure 7: *Brighton & Hove City Council Impact Risk Zone for Great Crested Newts, NatureSpace Partnership*

6. Integrating biodiversity into development

Most development sites, even very small sites or those with limited landscaping, can provide opportunities for biodiversity enhancement through careful and well thought out design and species selection.

6.1 Landscaping

Landscape design in new development, including small scale and some types of householder development, should seek to retain, enhance and create habitats of value to biodiversity wherever possible. The retention of front gardens in householder development is encouraged as they can provide multiple environmental benefits. Landscape elements can include boundary hedgerows, trees, wildflower grassland / flowering lawns and ponds. Where these are already present on site these can provide the framework for the setting of the scheme layout. New landscaping features can help to achieve biodiversity net gains, as well as contribute to the post development network for nature, allowing wildlife to move safely and easily. The use of native species of local provenance is encouraged as they generally offer more benefits to local wildlife than non-native species, as well as enhanced biosecurity. Examples of wildlife friendly tree, shrub and perennial species considered suitable for landscaping are found in Annex 7.

Biodiverse and ecological productive landscaping, Kidbrooke Village, London © Nick White

Landscape design, both in garden spaces and in the wider public realm, should enhance existing habitats wherever possible and link them to new habitats created within the development, such as linking up defunct hedgerows and tree corridors on and off site. As an example, the use of low nutrient status soils to create chalk grassland that will have low maintenance requirements is encouraged as a more sustainable approach to management and is locally appropriate.

Applications within the B-Lines identified by Buglife should include sustainable landscaping features of value to invertebrates, especially pollinators, including flowering lawns / wildflower grasslands, pollen and nectar-rich plants, shrubs and trees.

Butterfly and bee banks

Butterfly and bee banks can be easily created from mounds of chalk planted with wildflower species which thrive on chalk such as ox-eye daisy, field scabious, betony and kidney vetch. Low-lying species that do not have a particularly high sward are of particular value to invertebrates, as are areas of bare ground and chalk.

Relatively small banks can be created in sunny aspects and connected to the wider landscape as part of a landscaping scheme and will attract a range of pollinating insects such as bees and butterflies, as well as providing habitat for many other invertebrates.

Preparation of a butterfly bank © Dr Dan Danahar

Ox-eye daisy & horse-shoe vetch © The Living Coast

Information on the creation of butterfly banks has been produced by Cambridge Conservation Initiative

Case Study: Liz Williams Butterfly Haven, Dorothy Stringer School

At Dorothy Stringer School, Brighton, an experimental reserve was created on amenity grassland within the school grounds. Three linear tiers were constructed on a chalk slope, sown with a native wildflower seed mix of local provenance and planted with 5,500 locally sourced wildflower plugs.

When surveyed after its first year, 97 wildflower species and 10 grass species were recorded along with various invertebrates including those of national rarity. Since its creation in 2007, 33 butterfly species have been recorded on site, 15 of which have been observed breeding.

The site has demonstrated that the low nutrient concentrations and relatively high pH of chalk, its drainage capacity and varying aspects provide suitable growing conditions for a range of wildflower species and invertebrates of significantly high biodiversity value.

Lessons learnt from the creation of this first butterfly bank have resulted in a different construction on subsequent banks throughout the city. At Varndean School, curvi-linear banks were created to expose the substrate to multiple aspects and create a wider range of microhabitats.

Subsequent banks have been created entirely from chalk to prevent a denser and higher sward associated with more nutrient-rich soil conditions from colonising the banks; and seeds have been sown in clusters to leave areas of bare chalk, supporting the various life stages of certain invertebrates.

A further bank at Dorothy Stringer School, created as mitigation for the football pitch, was seeded with only chalk downland wildflower species, resulting in a richly biodiverse feature (see image) and was complemented by planting of Elms, providing habitat for the White Letter Hairstreak butterfly.

Butterfly bank © Dorothy Stringer School

Bug-hotels and log piles

Inclusion of landscaping features that mimic natural insect habitats specifically dead wood piles and stands for beetles such as stag beetle, and nesting sites for solitary bees and wasps (*Aculeate hymenopterra*), when combined with biodiverse planting, provide easy-wins for local wildlife including shelter and foraging opportunities for birds and bats and other mammals such as hedgehog. Features can be as small as a few logs piled in the corner linking to boundary hedges, or bug hotels comprising of wood drilled with small holes located in a sunny spot. If development requires vegetation or tree removal, then the arisings can be used to create instant habitat features on the site without the need to bring in outside materials and with no added costs.

Juvenile Common Lizard © Kim Dawson

Bee hotel © Sue Hooton

Ponds

Small and large ponds add value for biodiversity and wildlife. Pond creation or features that collect water during wet spells provide perfect habitats for aquatic insect life and amphibian species and link nicely with Sustainable Drainage Systems (SuDS) helping alleviate surface water flooding.

Common Frog © Kim Dawson

Wider benefits of landscaping

Landscaping features can also provide opportunities to create habitats that will address environmental challenges arising from climate change by providing ecosystem services.

Green roofs can provide multiple benefits including reducing run-off and the urban heat island effect. Similarly, trees can create a cooling effect and provide opportunities for shade; tree planting systems specifically designed for built environments can provide an opportunity to capture and disperse excess surface water; trees and planting can improve air quality by absorbing and trapping pollutants and particulates. Permeable surfaces should be used around any trees retained within paved areas and new tree planting should be carried out in a way that ensures that the trees have access to sufficient soil and water to achieve maturity and maintain their health.

Landscape restoration can be also beneficial to both biodiversity and heritage assets, for example where located within heritage assets such as Registered Parks and Gardens.

The use of food producing plants in landscaping has benefits including biodiversity enhancement, climate change adaptation, local amenity, and health and wellbeing. Opportunities include fruit producing trees in traditional or scattered orchards; fruit bushes and edible plants instead of ornamental plants; and communal allotment or beds.

Further information is available in the council's PAN06 Food Growing and Development.

Saunders Park Edible Garden incorporating edible hedging with rosemary, red, black and white currants © Rosie Linford

6.2 Boundaries

The arrangement of garden spaces within a development should aim to form a connected network, with links to surrounding green space and the wider landscape including Priority habitats and designated sites, thus forming part of a nature recovery network, rather than creating isolated pockets or islands within the built landscape.

Boundaries should be designed to facilitate the movement of wildlife between properties within a development. Native species rich hedgerows are the preferred boundary treatment. Fencing should be hedgehog friendly and hedgehog highways should be incorporated throughout the development.

Hedgehog friendly fencing © Hamish Jackson

6.3 Swift bricks

New build development of 5m or greater in height are required to incorporate swift bricks/boxes, with regard to the council's Guidance note for provision of swift bricks. As recommended in the guidance, internal swift bricks that are integrated into the walls are preferred to external boxes, where feasible. Swift bricks/boxes should be secured at the following rate:

- Minor residential development should provide a minimum of 3 swift bricks, or two per residential unit, whichever is the greater;
- Minor commercial development should provide 3 swift boxes, or one per 50sqm of floorspace, whichever is the greater; and
- Major developments should seek to secure similar provision and will be recommended by the council's ecology advisor.

Householder extensions should also have regard to the Swift Guidance and provide a swift brick/box on any suitable development greater than 5m in height.

6.4 Bee bricks

All new build development and extensions to existing buildings are required to incorporate bee bricks at a rate of one bee brick per dwelling. Different requirements may be recommended for major applications. Bee bricks are integrated into the external walls of the development, in place of a standard brick. Complimentary planting, including nectar-rich species, should be provided within the landscaping to attract the bees and provide a food-source.

6.5 Integrated boxes

In addition, other measures such as companion landscape planting, which provides a food-source and supports the various stages of the lifecycle for numerous species, and integrated boxes, which can be a combination of bird, bat and insect boxes, can be provided to support other species. These should target Priority species and species of local conservation concern such as insects, house sparrow, starling and bats. High quality durable boxes may be acceptable on retained trees within the public realm. An appropriate amount is suggested as follows:

- Major development – 50% of dwellings to incorporate an integrated unit
- Minor development – 1 integrated unit per dwelling or 100sqm of floorspace
- Householders – 1 integrated unit

Example of a bee brick © Robert Nemeth

Integrated boxes © Neil Harvey

6.6 Biodiverse roofs and walls

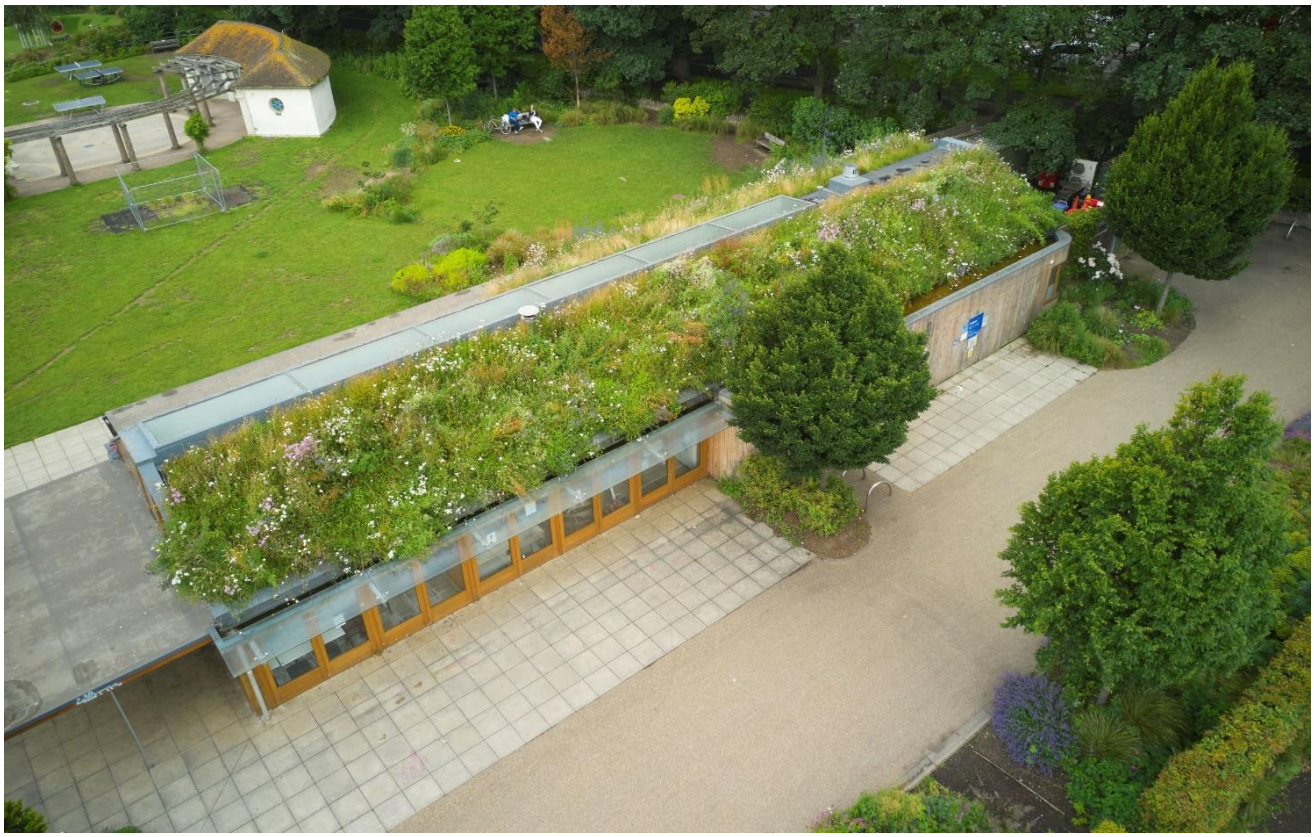
Biodiverse, living or green roofs and walls can provide valuable habitat on sites particularly where space for new habitat creation is constrained and are therefore good options for highly urban developments. They can play an important role in providing new habitat for species displaced by the development, for invertebrates and wildlife species that already live in the city and gardens and for connecting up the wider landscape. In addition to ecological and aesthetic improvements, biodiverse roofs can provide a range of other benefits, such as slowing storm runoff, reducing flood risk, cooling urban areas and increasing energy efficiency. There is also evidence that green roofs increase the efficiency of photo voltaics.

Intensive living roofs, with soil depths of over 350mm can support trees, shrubs and even water features. Intensive roofs add a significant additional load to the roof structure and may require substantial maintenance.

Extensive living roofs have substrate depths of between 25mm and 125mm and add much lower loading to the roof structure than intensive roofs. These can support a range of plants and growing mediums and can be planted with a range of native chalk grassland plants, using locally sourced growing mediums.

Biodiverse roofs are constructed from layers of impermeable membrane, cushioning and a growth medium to provide a habitat for vegetation. Habitat design and species mix should be selected to support diverse habitats of local relevance, such as chalk grassland species, rather than sedum monocultures which have immediate aesthetic appeal but limited value to biodiversity. The use of native species of local provenance is encouraged. Thin substrate sedum systems do not maximize the biodiversity potential of green roofs and would not merit Good condition within the Defra Biodiversity Metric.

Brown roofs, landscaped with exposed substrates and a varied topography, supporting nectar and pollen rich flowering plants, are also a good alternative and can provide new habitat for invertebrates and other wildlife species such as birds.



Biodiverse roof on Velo Café, The Level, Brighton. © Organic Roofs

Biodiverse walls normally incorporate permanent trellis work, spaced off the masonry, to support non-clinging climbers. They can be designed to avoid structures, gutters and downpipes, confining climbing vegetation to the wall itself. Climbing plants should be planted at least 40cm away from the wall in an irrigated plant pit stocked with nutrient-rich topsoil. Biodiverse walls have also been combined with trickle irrigation systems and growing media to support non-climbing plants directly on the walls themselves.

Biodiverse walls protect masonry from extreme temperatures, air pollution and rainfall. They can also provide nesting and feeding habitat for birds (particularly Wren, Robin and Blackbird) and other wildlife. Native plant species suited to creating climbing green walls include Honeysuckle (*Lonicera periclymenum*), Hop (*Humulus lupulus*), Traveller's Joy (*Clematis vitalba*), and Ivy *(Hedera helix*). Non-native climbing species can also provide nature conservation benefits if known to be pollen and nectar-rich.

6.7 Sustainable drainage systems (SuDS)

SuDS can include permanent water features, such as ponds, as well as features such as rain gardens and swales that fill up during rainfall events to manage surface water run-off, helping to ensure water quality is not adversely affected by development. SuDS have the potential to improve biodiversity by enhancing existing and creating new wildlife habitats and can deliver BNG if designed to provide natural habitats, particularly using locally native species. The Royal Society for the Protection of Birds and the Wildfowl and Wetlands Trust have produced guidance to maximising the benefits to biodiversity from SuDS alongside other functions. SuDS can also provide additional benefits such as improved air quality, noise mitigation and access to nature.

Inclusion of SuDS within a site is the preferred approach to managing rainfall and surface water runoff. It is essential that the management of water is considered at the earliest stage of a development and built into the design, although SuDs can also be retrofitted. The choice and design of SuDS must be appropriate to the site to ensure there is no adverse impact on groundwater quality. The council's Sustainable Drainage SPD provides further guidance.

Lockshill Garden Rain Garden Pilot © The Living Coast

In relation to the development site location and layout, developers should check details of Registered Toad crossings and advice listed by Froglife. This will help avoid direct impacts on known toad breeding populations from the discharge of the sustainable drainage systems constructed for the development, alongside considered design of raised kerbs and drains/gully pots within the development which can cause fragmentation of commuting routes, and trap and kill amphibious species.

SuDS can attract breeding amphibians and future migrations routes should be considered to avoid creating new road or drain fatality hotspots. Measures such as avoiding gully pots or offsetting them from the edge of the kerb, using dropped kerbs where appropriate, and installing amphibian ladders in existing gully pots can help to protect and conserve amphibious and other species.

Darcey Drive Case Study

At Darcey Drive, Brighton, a short-mown grassland verge was identified as suitable for the retrofit of a SUDS scheme to alleviate surface water flooding and pollution problems. The infiltration basins and swales were designed with the aim of satisfying all four pillars of SUDS – managing water quantity, improving water quality, providing amenity for people, and enhancing biodiversity.

Planted coir pallets with native wetland plant species provides instant wetland habitat that traps silt and pollutants from road runoff in an impermeable interceptor basin. Clean water overflows into a series of infiltration basins - seeded with native meadow grassland from where it drains away, and these basins provide capacity during heavy rain.

Native wildflower grassland and aquatic plants enhance biodiversity, notably providing habitats for pollinating insects, birds, bats and hedgehogs, alongside providing visual interest through colour, texture and greater vegetative structure for local residents.

6.8 Maintenance and management

To ensure long-term benefits for biodiversity are maximised, any measures incorporated within a development must be maintained and appropriately managed. Where measures provide mandatory biodiversity net gain, these must be maintained and managed for a minimum period of 30 years, as required by the Environment Act. Maintenance and management may be secured by planning condition or obligation.

7. Step by step guide to biodiversity and the development management process

Embedding biodiversity at project inception stage and ensuring proposals are supported with appropriate evidence, where relevant, is necessary and will help enable efficient and effective decision-making.

Biodiversity is a material consideration for planning and needs to be considered at every stage in the planning application process, as summarised below in Figure 6.

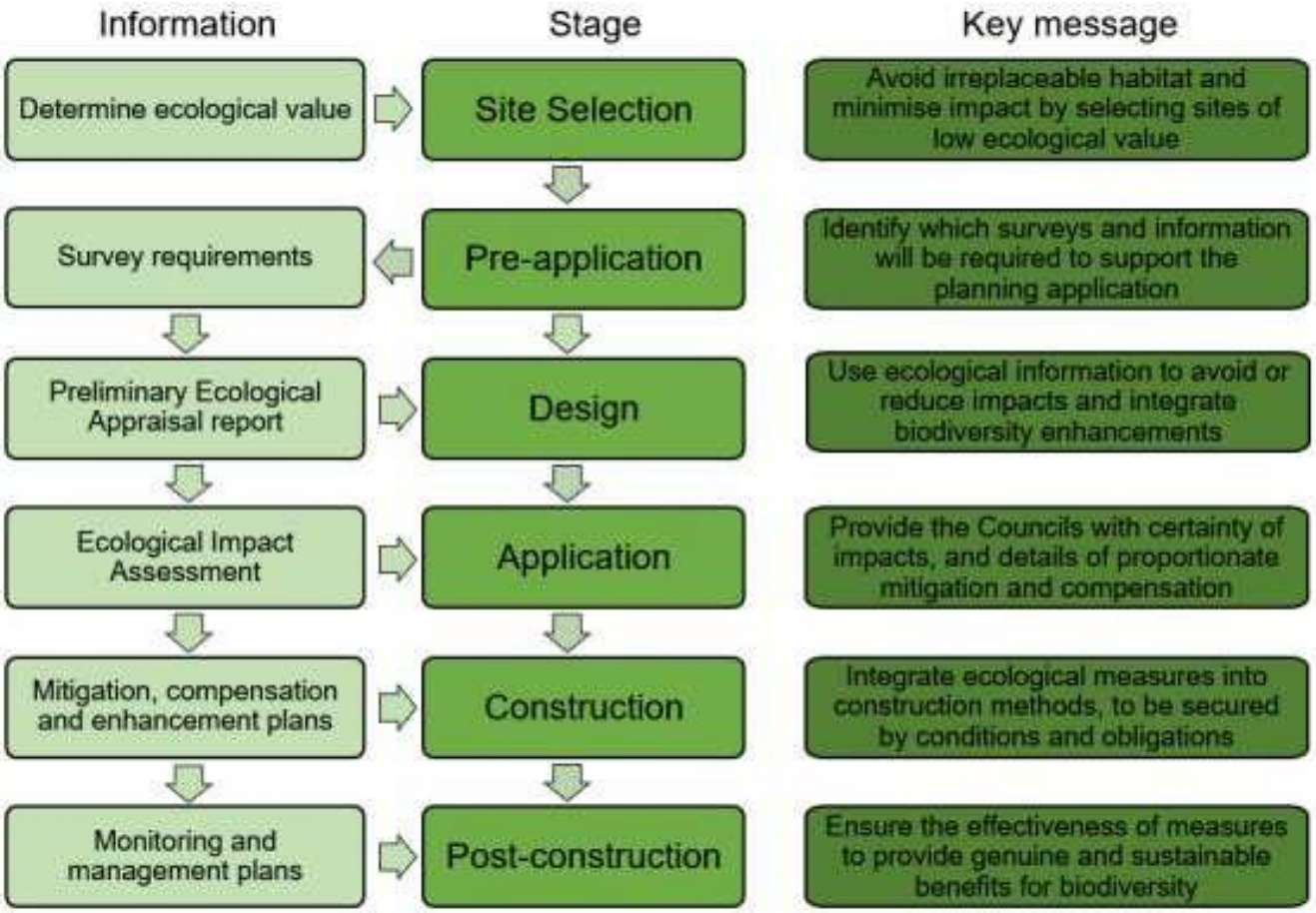


Figure 6: *Stages within the Development Management process (Place Services)*

Step by step guide to the planning process

Table 3 summarises the main steps at each stage of the planning process to ensure development is in accordance with the mitigation hierarchy, provides appropriate and measurable biodiversity net gains, and that adequate information on biodiversity is provided. Adopting this approach ensures best practice for integrating biodiversity into the design of development is achieved. Each section is explained in full.

Table 3 Summary of step-by-step process

Step	Key considerations/actions	Outputs	Principles and biodiversity matters
Stage A - Pre-application and design stage			
A1: First Impressions Survey (Biodiversity Checklist)	Check whether biodiversity features are present and likely to be affected.	Biodiversity Checklist. Preliminary Ecological Appraisal (PEA) including Ecological Constraints and Opportunities Plan (ECOP). Pre-Application Advice.	Principle 1: Mitigation Hierarchy. Biodiversity Matters 1-7.
A2: Pre-application advice	Option to seek pre-application advice to ensure policy requirements are fully understood and to clarify the scope of any information likely to be required in further assessments.		
A3: Ecological survey and assessment; BNG baseline assessment	Appropriate surveys and assessment carried out by suitably qualified ecologist. BNG habitat baseline assessment carried out using the relevant Defra Biodiversity Metric.	Ecological Impact Assessment with information from all ecological surveys including PEA / ECOP, and habitats and species surveys. Baseline Defra Metric.	Principle 1: Mitigation Hierarchy. Principle 2: BNG.
A4: Avoidance, mitigation and compensation	Scheme design and layout to avoid harm / impacts wherever possible; minimise impacts to identified features, firstly through adequate mitigation then compensation as a last resort.		Principle 1: Mitigation Hierarchy. Biodiversity Matters 1-7.
A5: Biodiversity Net Gain	Design to incorporate enhancements to deliver net gains. Defra Biodiversity Metric completed, where relevant, to reflect design.	Completed Defra Metric. Biodiversity Net Gain Report.	Principle 2: BNG. Integrating biodiversity into development.
Stage B – Application and Validation			
Submission of planning application and accompanying information	Ensure the application includes: biodiversity checklist; PEA report and ECOP if no additional surveys required, or EcIA incorporating protected species survey results, ECOP, assessment and mitigation where relevant; BNG Report including Biodiversity Metric calculations. Ensure all assessments undertaken in accordance with specified standards by suitably qualified professionals.	Biodiversity Checklist Ecological Surveys and Impact Assessment (where relevant) including EcIA / PEA / ECOP BNG Report	
Stage C – Planning permission granted – construction			
Construction	Discharge any relevant planning conditions, such as Construction Environmental Management Plan (CEMP) and Landscape and Ecology Management Plan (LEMP). Ensure good practice is followed during construction and CEMP adhered to, where relevant.	Construction Environmental Management Plan (CEMP) and/or Landscape and Ecology Management Plan (LEMP)	
Stage D – Post-construction – management and monitoring			
Operation	Ensure adequate provision is made for ongoing management and monitoring of biodiversity habitats retained or created including any requirements relating to a LEMP, where relevant.	LEMP – Landscape and Ecology Management Plan	

Stage A: Pre-application and design stage

A1: First impressions survey (Biodiversity Checklist)

Once a site has been selected, a first impressions survey using the Biodiversity Checklist should be carried out for certain applications (see Annex 5). The Checklist helps to identify developments which may have an impact on certain habitats and species. If the Checklist indicates that development could have a potential impact on protected or Priority habitats or species such as a designated site, further ecological survey and assessment will be required, as described under Stage A3.

The Checklist is **not required** for the following types of planning applications: advertisement applications, air conditioning units/air source heat pumps (and similar), changes of use, conversion to flats (if not affecting the roof), crossovers (where no hard standing needs to be created), extract ducting, fences, removal of fire escapes, roller blinds/shutters, satellite dishes, shop fronts, walls and gates, windows and doors.

All other types of development proposal must include a completed biodiversity checklist for the application to be validated. This includes householder applications where the development requires a planning application (not permitted development); listed building consents where the roof will be affected including roof lights, solar panels or floodlighting of churches or trees; full planning applications including single/two storey extensions and residential/commercial new build; and outline planning applications. A checklist may be required for variations.

If the checklist flags up a potential impact on a protected or Priority habitat or species, seeking the early advice and input from a suitably qualified and experienced ecologist, and the undertaking of a Preliminary Ecological Appraisal can help to ensure biodiversity is considered throughout the design of the development and ensure that any sensitivities are identified at an early stage, in order to avoid impacts and manage ecological constraints and opportunities in a more transparent, efficient and cost-effective way.

A2: Pre-application advice

The council offers a paid pre-application advice service. This may help to ensure that policy requirements are fully understood at an early stage; and that potential biodiversity sensitivities are identified, and discussions held at an early stage, in order to seek advice and avoid impacts. The pre-application service may be particularly valuable to householders and those who are not regularly involved in development, who may not routinely seek professional ecological support, or be aware of all the relevant legislative requirements or issues.

Applicants wishing to seek advice on recreational pressure impacts and mitigation relating to Sites of Special Scientific Interest should refer to Natural England's Discretionary Advice Service.

Choosing a Consultant

Homeowners and developers will often require an ecologist to undertake ecological surveys and reporting to meet the council's requirements for providing adequate ecological information. Contracting a member of a professional institute, such as the Chartered Institute of Ecology and Environmental Management (CIEEM) means that you are engaging a professional who is working to high standards; there is also a complaints procedure if anything goes wrong. Applicants needing to find an ecological consultant can use the find-a-consultant tool on the CIEEM website. The CIEEM website also provides further information on ecological surveys and their purpose, which describes the different types of reports that you may be asked for by the council and includes a householder's guide to engaging an ecologist.

A3: Ecological survey and assessment and BNG baseline assessment.

Where appropriate, planning applications will need to be supported by adequate ecological information, using up to date desk studies and site assessment to inform survey methodologies sufficient in scope to allow the impact of a proposal to be appropriately assessed to enable the council to demonstrate in the exercise of planning functions how it is fulfilling the duty to have regard to the conservation and enhancement of biodiversity. This includes householders and developers of small sites where there may be risks of impacts to habitats and species.

Baseline Information

Biodiversity baseline information from the Sussex Biodiversity Record Centre is needed within all ecological reports to identify the presence of designated sites and existing records of protected and priority habitats and species that could be affected by development within the appropriate and sufficient zone of influence[2]. The data generated through a desk study should be properly analysed and interpreted, with the results used to inform the development proposal design including implementation of the mitigation hierarchy and required survey work and assessment to support a planning application.

Data search requests should be for a minimum 1 km buffer from the red line boundary for protected and Priority species and 2 km for all designated sites, extending further where for example mobile species, such as bats and birds could be affected whilst passing through the project site.

While older data may be less relevant in some cases, it may provide the only baseline available for a site and so should not be discounted.

An absence of records does not mean a record of absence and ecological consultants need to use their professional judgment to ensure that biodiversity features are not overlooked. Survey and assessment of all species likely to be present on and adjacent to the development site and any which could be affected indirectly should be covered.

Provision of this data within submitted ecological reports needs to be presented in accordance with the terms and conditions of Sussex Biodiversity Record Centre and any sensitive records should only be shown at 10km resolution.

Preliminary Ecological Appraisal (PEA)

A PEA is a rapid assessment, carried out by ecologists, of the ecological features present or potentially present within a site and its surrounding area (zone of influence) and typically comprises a desk study and a walkover survey. It is an initial means of recording the habitats and condition of a site and predicting the likely ecological constraints and opportunities that might arise if the site is developed (see ECOP section below).

PEAs should be commissioned at the earliest stages of design, and their results used to inform the developer's design team, influence the layout and form of the proposals and as an evidence-base to show the implementation of the mitigation hierarchy. Identifying important ecological features at the outset and avoiding impacts will limit the loss of biodiversity and reduce the need for mitigation and compensation measures.

Where relevant, these reports will include recommendations for further survey, particularly in relation to protected and Priority species where habitats likely to support such species are recorded and are to be impacted by the development.

[2]The area(s) over which ecological features may be affected by the biophysical changes caused by a proposed development project and associated activities.

A PEA should only be submitted as part of a planning application where it can be demonstrated that the project would have no significant ecological effects, no mitigation is required, and no further surveys are necessary. Where these cannot be demonstrated, the PEA should be superseded by an Ecological Impact Assessment (EcIA) report.

A PEA is unlikely to be sufficient where designated sites and/or protected and priority habitats and species are likely to be affected and further surveys will be required. Development affecting non-designated sites and some householder applications may need a PEA.

Ecological Impact Assessment (EcIA)
Where the Biodiversity Checklist/PEA identifies likely development impacts on biodiversity and / or the need for further ecological survey work, the results of such surveys must be submitted with the planning application, clearly assessing the impacts of the proposed development on such ecological features, identifying any significant effects as well as impacts on any designated sites or protected species, and detailing both the mitigation measures required, and how these will be secured. The findings of an assessment will help the council understand the project's ecological constraints and requirements and provide assurance that effective and deliverable mitigation can be secured. Surveys must be carried out during the appropriate season (see Annex 4) and in accordance with published standards.

An EcIA should be produced in accordance with best practice guidance (BS42020:2013) and should contain all necessary survey results and a full assessment of ecological impacts. It should include reporting on all biodiversity features within the development site and wider area (zone of influence), proportionate and fully detailed mitigation and compensation measures that can be secured by condition or obligation, or by appropriate species licensing, and contain evidence that it has informed the design and has recommendations that have been embedded into the design.

Surveys and reports have a finite lifespan due to the response of habitats to environmental factors and changes in management and the dynamic nature of species populations. CIEEM guidance highlights issues with lifespan and the validity of reports in different circumstances. Outline or phased developments are likely to require conditions for further surveys to keep the survey information up to date.

In addition to the information within BS42020:2013, CIEEM provides detailed guidance about expectations in the reporting of biodiversity information in support of planning applications. Applicants are encouraged to choose professional ecologists that will comply with these expectations and can demonstrate their suitability for the role. Full details of those involved in survey work and reporting should be included in all reports with a summary of their experience and competence.

Where ecological information on species and habitats does not follow the mitigation hierarchy or is inadequate in the EcIA, further ecological surveys will be required and should be provided prior to determination. Further surveys will not be secured through planning conditions, unless in exceptional circumstances, as identified in paragraph 9.2.4 of BS42020:2013. An ecological report needs to be fit for purpose as this will reduce the risk of delay, cost and/or uncertainty associated with determination. All ecological reports need to be clear and unambiguous as to what measures will be implemented.

The council expects that all biodiversity records obtained during surveys to be submitted to Sussex Biodiversity Record Centre, as required by CIEEM's code of professional conduct. Applicants must not seek to restrict their ecological consultants from submitting biodiversity records.

Ecological constraints and opportunities plan (ECOP)
An Ecological Constraints and Opportunities Plan (ECOP) is a useful tool/drawing, submitted as part of the required ecology reports, used to present or 'traffic light' ecological information to other professionals and can assist with gaining the best outcomes for biodiversity. It has three main roles:

- at the pre-application stage, an ECOP may be used as an iterative tool within the design team to inform the overall design process;
- at the decision-making stage, it may be used to provide summary information for the decision-maker showing graphically how the mitigation hierarchy has been applied in practice – as such, it is an opportunity to show what and where the key biodiversity constraints and opportunities are associated with the proposed development described in the planning application; and
- at the implementation stage, it may be used to provide an overview, showing how and where biodiversity is to be addressed during the actual development works or aftercare period (e.g. as a summary drawing forming part of a construction environmental management plan)

An ECOP should be prepared using the results from ecological surveys, and initial identification of sensitive features and potential impacts, along with an assessment of their condition in relation to their potential for enhancement.

The level of detail in the ECOP should be proportionate to the nature and scale of the proposed development and should be used to inform the site design and layout, with biodiversity balanced against other competing needs, e.g. the need for amenity space.

An ECOP should be submitted as part of an EcIA where potential ecological impacts are predicted and to evidence-base implementation of the mitigation hierarchy.

BNG baseline assessment
A BNG baseline assessment is required to enable the post-development biodiversity value (BNG) of the site to be demonstrated upon application (see stage A5). As required by the Environment Act, pre-development biodiversity value must be calculated before any site clearance or other habitat management work has been undertaken. However, if this is known to have happened, the condition of the site on or after 30th January 2020 will be taken as the baseline of the habitat as stated in Schedule 14 Part 1 paragraph 6 of the Environment Act. An earlier baseline may be required where activity has reduced the biodiversity value of a site. Where previous surveys are not available, this will be established through best available evidence including Sussex Biodiversity Record Centre records and habitat areas identified through aerial photographs.

Habitat mapping methodologies need to be appropriate to their purpose. For BNG calculations, UK Habitats Classification is required to populate the Defra Biodiversity Metric.

Applications should be supported by the full Metric calculations, and not simply the headline results.

Other types of assessment
The consultant ecologist should determine whether the site falls within a SSSI Impact Risk Zone, as shown on the Multi Agency Geographic Information for the Countryside map, which would indicate that the development could result in indirect impacts that require consultation with Natural England.

Policy DM37 also requires the following to be undertaken in relation to developing affecting designated sites:

- International Sites - HRA screening/Appropriate Assessment
- National Sites - EIA screening/EIA; Marine Conservation Zone assessment
- Local sites - Ecological Impact Assessment

Where EIA screening scopes in the need for ecological assessment, all the necessary survey and impact assessment work should be provided within a separate ecology chapter of the EIA Report.

A4: Avoidance, mitigation and compensation

The results of any ecological surveys and assessment should feed into the initial design process, as should the ECOP. These will help ensure the layout and design of the development avoids wherever possible and minimises impacts to the features identified in steps A1 and A3, thus ensuring design is in accordance with the mitigation hierarchy. Design in accordance with the mitigation hierarchy should be considered as a sequential process, with each step in the hierarchy being considered in turn and incorporated into the design, before the next step is considered.

(See Principle 1: Mitigation Hierarchy and Biodiversity Matters 1-7)

A5: Biodiversity Net Gain

BNG or biodiversity enhancements are additional to any measures necessary to deal with impacts from the development and should not be used to provide either mitigation or compensation. To meet national and local policy requirements ahead of mandatory measurable net gain, applicants should ensure that biodiversity enhancements are included in a development to secure measurable net gains. Creating new habitat, enhancing existing habitat or providing new features all contribute towards biodiversity enhancement and BNG (see Section 6: Integrating biodiversity into development). All BNG should conform to Biodiversity Net Gain - Good Practice Principles for Development.

BNG for small sites and householder applications[3]

For small sites[4] and any relevant householder applications, BNG measures should be clearly identified in supporting information and illustrated on the relevant plans. The measures should be proportionate to the scale and type of development, should be appropriate to the site's location and surroundings, and should be focussed on supporting recognised nature conservation priorities.

For small sites, the Defra small sites Biodiversity Metric is available in a beta version and should be used to demonstrate biodiversity value and net gain. However, the small sites metric cannot be used if a priority habitat is present on site. Guidance has been published by Natural England on how to use the metric.

BNG for larger applications[3]

For larger[5] developments, or where a priority habitat is present on site, the latest version of the Defra Biodiversity Metric should be used as a tool to inform the assessment of demonstrating biodiversity value and measurable mandatory net gain of at least 10%. Guidance has been published by Natural England on how to use the metric.

A Biodiversity Net Gain report should also be submitted. It is anticipated that the government will provide further guidance on the content of a BNG report, however prior to this being released, a Biodiversity Net Gain report in line with Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021) should be submitted with planning applications. For outline applications, a Biodiversity Net Gain Feasibility Assessment report should

[3] Forthcoming government regulations will identify certain developments that will be exempt from the mandatory measurable BNG requirements of the Environment Act and will provide clarity on which Biodiversity Metric should be used.

[4] For the purposes of BNG, small sites include residential development providing between 1 and 9 dwellings on a site of less than 1ha; residential development where the number is unknown on a site less than 0.5ha; other development where the site area is less than 0.5ha or provides less than 5,000sqm floorspace.

[5] This applies to any development falling outside the parameters of the small sites metric, or development where a priority habitat is present on site.

be submitted, and for full and reserved matters applications, a Biodiversity Net Gain Design Stage report should be submitted. This should include:

- Steps taken to avoid adverse impacts to biodiversity
- Pre-development and post-development biodiversity value
- Additional information to explain and justify the approach to delivering net gain, including notes on the existing and target habitat condition and any assumptions made.

The council will verify the accuracy of the biodiversity value calculations and consider the merits of any on or off-site BNG measures. Any scheme for BNG must include a mechanism for delivery of the target habitats, management, and monitoring of their condition, and an approach to remediation in the event of targets not being met. Schemes for the delivery of BNG should be developed with regards to BS8683:2021 "Process for designing and implementing biodiversity net gain – Specification".

Planning conditions will be used to secure delivery of BNG measures and their long-term management. Obligations, such as Section 106 agreements may be used where BNG is on land outside the applicant's control.

(See Principle 2: Biodiversity Net Gain)

Stage B: Application and validation stage

Planning applications must be accompanied by all necessary and relevant ecological information in order for it to be validated and determined. This will vary between applications and will depend on the proposal and the site itself. Information required could include:

- Biodiversity Checklist (validation requirement for certain applications)
- Preliminary Ecological Appraisal
- Ecological Impact Assessment
- Ecological Constraints and Opportunities Plan
- Defra Biodiversity Metric
- Biodiversity Net Gain Report

Protected species information is key to supporting determination. Validation of an application does not necessarily mean there is sufficient information to allow for determination. The submitted EcIA has to provide the council with certainty of all likely ecological impacts on designated sites and protected or Priority species and demonstrate that effective and deliverable mitigation can be secured either by condition or mitigation licence from Natural England.

If insufficient ecological information is provided the council may suggest the application is withdrawn, decline to validate the application, or refuse it on grounds that there is insufficient information to make a lawful determination.

Stage C: Planning permission granted – construction

The construction process may involve demolition or clearance of vegetation which has the potential for impacts on biodiversity. Even where development does not involve demolition or site clearance, wildlife can still suffer from disturbance. Annex 6, the Hazard Prevention Checklist, identifies a range of hazards associated with the construction stage.

Practical measures which may be appropriate depending on the scale of development include:

- Sensitive siting and timing of construction activities including works compounds
- Fencing to protect sensitive features
- Wildlife exclusion barriers
- Sensitive construction lighting
- Provision of temporary shelters
- Containment and control of invasive species

A precautionary approach to site clearance will be required for all development to ensure reckless actions are avoided and wildlife crime is prevented. All protected and Priority species on site will need to be moved to a place of safety. This may include supervision of any habitat works by an Ecological Clerk of Works, who will undertake a fingertip search.

A Construction Environment Management Plan: Biodiversity may be required by condition for some developments. This will need to include details of all necessary ecological mitigation measures, including protection measures for retained habitats and species and any requirement for ecological supervision during works on site using a suitably experienced Ecological Clerk of Works. Where mitigation or compensatory measures are sought, these must be delivered in accordance with best practice.

Stage D: Post-construction – management and monitoring

Where habitats are retained within a development site boundary, the council will seek to secure their long-term management via condition requiring relevant details to be provided within a Landscape and Ecological Management Plan.

Where species are predicted to be affected by proposals and habitat to support their population is retained or created on or off site, such as receptor sites for translocated animals, the council will seek to include monitoring of the effectiveness of mitigation. This will be separate from any legal requirement attached to a licence approved by Natural England and will be secured by condition. Additional monitoring may be required for novel mitigation solutions.

All management plans should include appropriate monitoring to ensure effectiveness and should include a process for remediation and review for any measures that have not been effective. The results of such monitoring should be reported to the council for review of management aligned to the LEMP.

Monitoring Biodiversity Net Gain

To deliver genuine Biodiversity Net Gain on-site will require careful design, zoning and management to ensure there are no recreational conflicts with the proposed areas for habitat creation that might prevent objectives from being achieved.

The Environment Act requires mandatory BNG habitat to be secured for at least 30 years via planning obligations or conservation covenants. More details of how BNG should be monitored is expected through secondary legislation.

Glossary

Acronyms

BNG	Biodiversity Net Gain
BOA	Biodiversity Opportunity Areas
CPP1	City Plan Part One
CPP2	City Plan Part Two
EcIA	Ecological Impact Assessment
ECOP	Ecological Constraints and Opportunities Plan
EIA	Environmental Impact Assessment
HRA	Habitats Regulations Assessment
LNP	Local Nature Partnership
LNR	Local Nature Reserve
LNRS	Local Nature Recovery Strategy
LWS	Local Wildlife Site
MCZ	Marine Conservation Zone
NNR	National Nature Reserve
NRN	Nature Recovery Network
PEA	Preliminary Ecological Appraisal
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage Systems
UNESCO	United Nations Educational, Scientific and Cultural Organization

Definitions

Ancient or veteran tree: A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.

Ancient woodland: An area (with ancient soil ecology) that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites. Soils are a vital component of ancient woodlands due to the time (centuries or millennia) taken to form and their relative lack of disturbance means they are hugely complex and diverse.

Biodiversity baseline: Assessment of existing / current biodiversity conditions to provide a starting point (e.g. pre-project condition of biodiversity) against which comparisons can be made (e.g. post-impact condition of biodiversity), allowing the change in biodiversity to be quantified.

Biodiversity Gain Plan: A document detailing how a project has followed the mitigation hierarchy and also then achieved BNG (additional to any / all required mitigation).

Biodiversity metric: A Biodiversity metric has been developed by Defra. It is a tool used to measure and quantify biodiversity and assess changes (losses and gains) in biodiversity associated with development. The current metric (Version 3.1 was published on the 21.04.2022) only measures habitats and does not take species into consideration.

Biodiversity Net Gain (BNG): Where the natural environment is left in a measurable better condition after development than before. Gains in biodiversity must be greater than any losses in biodiversity following the

implementation of a development to achieve biodiversity net gain (BNG). The Environment Act 2021 seeks mandatory measurable BNG for development that qualifies.

Biodiversity Units: The unit of measurement used by the Biodiversity Metric. The units come in three types: area, riverine and hedgerow/line of trees.

Conservation covenants: are private, voluntary agreements between a landowner and a "responsible body", such as a conservation charity or government body. The covenant binds the initial landowner and subsequent landowners to ensure long-term conservation and environmental benefits on net gain sites (Environment Act)]

Ecological Impact Assessment (EcIA): The process of identifying, quantifying and evaluating the potential effects of development-related impacts or other proposed actions on habitats, species and ecosystems.

Ecological networks: An ecological network is a network generally made up of 5 components:

- Core areas of high nature conservation value which contain rare or important habitats or ecosystem services. They include protected wildlife sites and other semi-natural areas of high ecological quality.
- Corridors and 'stepping stones' enabling species to move between core areas. These can be made up of a number of small sites acting as 'stepping stones' or a mosaic of habitats that allows species to move and supports ecosystem functions.
- Restoration areas, where strategies are put in place to create high value areas (the 'core areas' of the future), restoring ecological functions and wildlife.
- Buffer zones that protect core areas, restoration areas, and 'stepping stones' from adverse impacts in the wider environment.
- Sustainable use areas, areas of surrounding land that are managed in a sustainable and wildlife friendly way. The ecological networks for different species work at varying scales: some species need a large area, others a much smaller area.

Environmental impact assessment: A procedure to be followed for certain types of project to ensure that decisions are made in full knowledge of any likely significant effects on the environment. The ecological information can form the ecology chapter as part of the process.

European site: Defined in the Regulation 8 of the Conservation of Habitats and Species Regulations 2017 as: Special Areas of Conservation, Sites of Community Importance, candidate Special Areas of Conservation and Special Protection Areas.

Habitat Creation: Habitat creation involves the creation of a habitat where is does not currently exist. For example: establishment of a species rich grassland on land previously used as a car park.

Habitat Restoration: Involves remediation of a habitat to a condition higher than its current state or that was likely to exist in the recent past.

Habitats Banks: Sites where habitat is created in advance, prior to any loss occurring. This habitat will need to be secured and managed long-term.

Habitats site: Used in the NPPF to define any site which would be included within the definition at Regulation 8 of the Conservation of Habitats and Species Regulations 2017. Includes: European sites and European Marine sites defined above. In addition, for the purposes of the NPPF potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites and sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

Important Hedgerows: Hedgerows which meet the criteria listed in the Hedgerow Regulations 1997 will be considered to be 'Important Hedgerows'.

International, national and locally designated sites of importance for biodiversity: All international sites (Special Areas of Conservation, Special Protection Areas, and Ramsar sites), national sites (Sites of Special Scientific Interest) and locally designated sites including Local Wildlife Sites.

Irreplaceable habitat: Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen. (Definition taken from the NPPF)

Local Nature Recovery Strategies (LNRS): will set out locally agreed priorities and opportunities for nature recovery in written and mapped form.

Marine Conservation Zone: Areas created to protect a range of nationally important marine wildlife, habitats, geology and geomorphology under the Marine and Coastal Access Act 2009.

Material Consideration: A material consideration is a matter that should be taken into account in deciding a planning application or on an appeal against a planning decision. Can include (but not limited to) nature conservation, government policy and previous planning decisions.

Mitigation Hierarchy: The principle that environmental harm resulting from a development should be avoided as a priority, adequately mitigated, or, as a last resort, compensated for (NPPF, 2021).

Natural Capital: Can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things (biodiversity).

Nature Recovery Network: An expanding, increasingly connected, network of wildlife rich habitats supporting species recovery, alongside wider benefits such as carbon capture, water quality improvements, natural flood risk management and recreation. It is likely to include and expand upon the existing ecological networks including protected sites, other wildlife rich habitats (priority habitats),
as well as landscape or catchment scale recovery areas and corridors where there is coordinated action for species and habitats.

Priority habitats and species: Commonly used term for Species and Habitats of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.

Special Areas of Conservation: Areas defined by regulation 3 of the Conservation of Habitats and Species Regulations 2017 which have been given special protection as important conservation sites

Species and Habitats of Principal Importance: Habitats and species included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.

Wildlife corridor: Areas of habitat connecting wildlife populations or habitats of importance together.