Royal Borough of Greenwich

Strategic Biodiversity Assessment

Client
Royal Borough of Greenwich

Date:
May 2025

Essex County Council

About us

Place Services is a leading public sector provider of integrated environmental assessment, planning, design and management services. Our combination of specialist skills and experience means that we are uniquely qualified to help meet the requirements of the planning process.

Our Natural Environment Team has expertise of arboriculture, biodiversity, countryside management and ecology. This multidisciplinary approach brings together a wide range of experience, whether it is for large complex briefs or small discrete projects. We aim to help our clients protect and improve the natural environment through their planning, regulatory or land management activities. This approach ensures that not only our clients will fulfil their legal duties towards the natural environment, but they do so in a way that brings positive benefits to wildlife and people.

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Contents

1. Introduction

1.1. Royal Borough of Greenwich instructed Place Services to produce a strategy for the protection and enhancement of habitat in the Borough. An outline of the relevant national and local policies, guidance and legislation provides a background to the framework underpinning Local Planning Authority actions for biodiversity.

1.2. The document summarises the environmental characters of the Borough and describes the existing biodiversity resource in terms of habitats and species leading to some principles and priorities for the management, restoration and creation of habitats for the purpose of conserving biodiversity.

1.3. As opportunities are constrained in the more developed parts of the Borough, all green infrastructure and habitat creation schemes should be carefully designed, with ecological input, and be focussed on the achievement of functional communities that provide coherence with the existing ecological network.

2. Policy and Strategy

National Policy and Strategy

Natural Environment and Rural Communities Act 2006

2.1. Section 40 of the Natural Environment and Rural Communities Act 2006, as amended by the Environment Act 2021, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving and enhancing biodiversity. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and decision making.

2.2. Managing the planning system is seen as one of the key areas in which the discharge of this duty can be demonstrated by local authorities, along with the management of assets, the development of infrastructure, procurement, and the formulation of wider policy and strategy and the programmes associated with delivering these.

2.3. Within the strategy, policy and guidance produced by the Government to back up legislation there is a range of documents and other sources of information that set out how things should be done, and those with sections of relevance and significance for the current assessment are summarised below.

National Planning Policy Framework

2.4. Section 15 of the National Planning Policy Framework (NPPF) covers the role of the planning system in conserving and enhancing the natural environment. Paragraph 187 states that planning policies should contribute to and enhance the natural and local environment by, amongst other things:

- protecting and enhancing sites of biodiversity value;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

2.5. Paragraph 188 goes on to state that development plans should take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure;

2.6. Paragraph 192 states that to protect and enhance biodiversity and geodiversity, plans should:

a) 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

b) 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.

2.7. Paragraph 193 restates the principle that 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.

2.8. Paragraph 193 also introduces the idea of irreplaceable habitats, development resulting in the loss and deterioration of which should be refused apart from in exceptional circumstances and where a compensation strategy has been produced. The NPPF includes a definition for irreplaceable habitats, which has been restated in guidance on their consideration in biodiversity net gain[1].

2.9. Irreplaceable habitats are those "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 only categories that apply in Greenwich are 'ancient and veteran trees' and 'lowland fen', the others being specific semi-natural habitats associated with specific environmental conditions that are not found in the Borough.

Making Space for Nature

2.10. Much of the government's approach to nature conservation strategy currently derives from this review for Defra published in 2010, often known as the "Lawton Report". The essence of the review is that sites designated for wildlife reasons in the UK are too small and too isolated. The conclusions of the report, in terms of what needs to be done to build a resilient and coherent ecological network, are: *more*, *bigger*, *better* and *joined*.

2.11. The report highlights five key actions to address this need:

"(i) Improve the quality of current sites by better habitat management.
(ii) Increase the size of current wildlife sites.
(iii) Enhance connections between, or join up, sites, either through physical corridors, or through 'stepping-stones'.
(iv) Create new sites.
(v) Reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites."

2.12. The report also sets out additional areas of improvement that can enable this action, such as proper planning of ecological networks, greater effort to secure multiple benefits from environmental management and consideration of the impacts of climate change within site designation and management.

2.13. The principles outlined within the report are now being used to underpin the preparation of Local Nature Recovery Strategies (see 2.18 below). Although Local Planning Authorities will have some responsibility for setting plans that shape the delivery of improvements in the ecological network according to these principles, the actions are likely to be primarily carried out by land managers under agricultural policies and developers through the planning system.

[1] https://www.gov.uk/guidance/irreplaceable-habitats

Environment Act 2021

2.14. The Environment Act received Royal Assent on 9th November 2021. It includes legislation on a wide range of subjects including environmental governance, waste and resource efficiency, air quality and water, but the following sections consider key information from the Part relating to nature and biodiversity (Part 6) as relevant to Royal Borough Of Greenwich.

2.15. The Act sets out the form of the general condition to be applied to planning permissions that requires biodiversity net gain and the way in which it is to be calculated.

2.16. The Act allows for the establishment of a biodiversity gain site register, specifying what counts as a biodiversity gain site and setting out the scope of the regulations that will guide who will be responsible for maintaining the register, what information is required to register a site and the process by which it is achieved. It also specifies that the information must be publicly accessible. The Act also sets out the parameters of a national credit scheme for meeting the requirement for biodiversity net gain in relation to a planning permission.

2.17. In relation to the NERC Act s40 biodiversity duty for public bodies in the exercise of their functions, the Environment Act strengthen this from to "conserve", to "conserve and enhance". It also requires public authorities to actively carry out strategic assessments of the actions they can take to enhance and conserve biodiversity. Designated public authorities are also required to produce a five-yearly biodiversity report to include the actions taken to comply with the biodiversity duty, actions taken to implement the general condition for biodiversity net gain, the results of biodiversity net gain plans approved by the authority, and any plans relating to biodiversity net gain over the following five years.

2.18. To guide net gain, and other policies such as those affecting planning and agriculture, the Act includes a statutory requirement for Local Nature Recovery Strategies (LNRS) to map important habitats and identify the best areas to create, restore and enhance natural habitats. Government has appointed responsible authorities to prepare the strategies and published guidance on how this should be completed during 2023. The Greater London Authority has been appointed as responsible authority for London, including all of the London Boroughs, and it is understood that it intends to publish the LNRS for London by the end of 2025.

2.19. The Act allows for the preparation of species strategies to improve conservation status of any species but is likely to relate primarily to those species receiving legal protection. Species strategies are intended to change the way in which Natural England exercises its functions in relation to species and are likely to involve an adjustment of licensing arrangements and standing advice. The Act requires Local Planning Authorities to cooperate in the preparation and implementation of any species strategy. It is understood that progress is initially being made on species strategies for Dormouse, Water Vole and widespread reptile species.

2.20. Alongside species strategies, the act allows for the preparation of protected site strategies to improve conservation management of SSSIs and internationally designated sites. This legislation also requires the cooperation of Local Planning Authorities, who will be

consulted on any plan that is prepared. The plans will include an assessment of the impacts that other plans or projects may have on the conservation management of the site, identify what avoidance or mitigation measures may be required, and consider what is required to improve its conservation management.

Ecological Networks

2.21. References to ecological networks in the NPPF are supported by the government's online guidance on implementing policy to protect and enhance the Natural Environment[2], which explains the composition of such networks and how they can be developed. This highlights the need to identify and map them as part of the plan-making process and the expectation that plans will include policies that identify appropriate levels of protection and identify opportunities to create, restore or enhance habitats, with a reference to improving connectivity.

2.22. The guidance also points out the wider benefits of these networks, in providing mitigation for climate change, tackling air pollution and improving the health and wellbeing of local communities.

2.23. As well as sites with national or international statutory designations, these networks should also include Local Sites, which in Greenwich consist of non-statutory Sites of Importance for Nature Conservation (SINCs), Locally Important Geological Sites (LIGS) and Regionally Important Geological Sites (RIGS). These are sites of substantive nature conservation value, identified with reference to clear and locally defined criteria and should be considered to be of Borough significance.

2.24. The Local Sites network is intended to be inclusive, meaning that any site that satisfies one or more of the relevant criteria should be considered to qualify. It would be expected that the criteria used would mean that all Priority Habitat should be included as would any habitat supporting a significant population of a Priority Species. They also reflect the importance of habitat corridors that permit or encourage the movement of biodiversity, either as a means of dispersal or to link nearby habitats of nature conservation significance, and the importance of public access to nature.

2.25. The identification of ecological networks should have reference to the character of the landscape, as influenced by its geology and geomorphology, in combination with natural processes and the cultural history of land use. Consideration of the implications of climate change and factors that could allow for species to adapt to the resulting environmental shift should also be included.

Biodiversity Net Gain

2.26. Biodiversity net gain is intended as a means to allow for the level of infrastructure, commercial and residential development that is needed by society while also improving the environment, and this is to be achieved by more than compensating for the biodiversity loss that results from any development. There is already a requirement for planning decisions to provide net gains for biodiversity, as set out in para. 187 of the

[2] Natural environment - GOV.UK (www.gov.uk)

NPPF, but the Environment Act 2021 introduced a mandatory requirement for that net gain to be a minimum of 10% for many planning applications.

2.27. Net gain requirements do not undermine the existing range of protections in planning policy and legislation, particularly those for irreplaceable habitats, protected species and protected sites, which will need to be addressed before net gain can be calculated. The mitigation hierarchy of first avoid impacts first, then mitigate and only compensate as a last resort still applies.

2.28. Mandatory biodiversity net gain will also apply to National Strategic Infrastructure Projects, from November 2025.

2.29. The Government has published the six Statutory Instruments that together with the Environment Act 2021 set out the biodiversity net gain framework. The Statutory Instruments are:

- The Biodiversity Gain (Town and Country Planning) (Consequential Amendments) Regulations 2023
- The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2023
- The Biodiversity Gain Site Register Regulations 2024
- The Biodiversity Gain Requirements (Exemptions) Regulations 2024
- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024
- The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024

2.30. The mandatory requirement for biodiversity net gain of 10% applies to all Town and Country Planning Act developments excluding those types of consent that are exempt:

- retrospective planning permissions made under section 73A; and
- section 73 permissions where the original permission which the section 73 relates to was either granted before the commencement date or the application for the original permission was made before the commencement date.
- local development orders
- neighbourhood development orders
- successful enforcement appeals
- deemed planning permission
- householder applications
- development granted planning permission by a development order under section 59, including by permitted development rights
- development subject to the de minimis exemption, meaning those that do not impact a priority habitat and impact less than 25 square metres of habitat, or 5 metres of linear habitats such as hedgerows
- developments that consist exclusively of dwellings which are self-build or custom housebuilding, that consist of no more than 9 dwellings, and that cover an area no larger than 0.5 hectares
- urgent Crown development granted under section 293A
- any application undertaken solely or mainly for the purposes of delivering biodiversity net gain for another development

- development related to the high speed railway transport network

2.31. Where appellants believe that their application is exempt from the general condition, they should submit a statement setting out the reasons as part of the application.

2.32. Section 73 applications relating to consents for which the applications were submitted after the commencement date in January 2024 will be subject to the general condition.

2.33. Importantly, the biodiversity net gain condition is not required for reserved matters applications, as these are not considered to be a grant of planning permission. The consequence of this is that all biodiversity net gain matters for these sites are required to be sufficiently resolved within conditions applied at the outline application stage.

2.34. Schedule 7A of the Town and Country Planning Act 1990 – inserted by the Environment Act – requires a minimum 10% increase in habitat value for wildlife in relation to the pre-development situation. This is achieved by way of a pre-commencement condition which is generally applied to all consents except those considered exempt. The fixed wording of the condition is:

"the development may not be begun unless -

(a) a biodiversity gain plan has been submitted to the planning authority, and

(b) the planning authority has approved the plan

2.35. Although the wording of the condition makes the delivery of biodiversity net gain a post-permission matter, draft Planning Practice Guidance[3] is clear that it is important that biodiversity net gain should be considered throughout the planning process to ensure that the condition can be successfully discharged. The guidance states that biodiversity net gain is a material consideration and best dealt with at pre-application stage in agreement with the Local Planning Authority. In many cases, biodiversity net gain arrangements will have to be secured within a S106 or other legal agreement.

2.36. The Biodiversity Gain Plan that must be approved to discharge the general condition is a standardised document that contains the information that the Local Planning Authority will need to assess the suitability of proposals against the net gain objective. The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024 includes provisions specifying the contents of Biodiversity Gain Plans and the way in which Local Planning Authorities should consider and determine them.

2.37. The format for Biodiversity Gain Plans related to applications for developments that will be completed in phases – including some outline applications – is different, requiring the approval of an Overall Gain Plan for the whole site before any development begins, and the approval of a Phase Gain Plan before each phase of the development begins.

2.38. As with other discharges of conditions, the Local Planning Authority have eight weeks in which to approve a Biodiversity Gain Plan. The guidance states that the Biodiversity Gain Plan must be approved if the Local Planning Authority is satisfied that:

[3] https://www.gov.uk/guidance/draft-biodiversity-net-gain-planning-practice-guidance

- "the pre-development biodiversity value of the onsite habitat is as specified in the plan,
- the post-development biodiversity value of the onsite habitat is at least the value specified in the plan,
- the registered offsite biodiversity gain allocated to the development has the biodiversity value specified in the plan in relation to the development,
- any biodiversity credits specified in the plan as purchased for the development have been so purchased, and
- the biodiversity net gain objective is met."

2.39. Biodiversity net gain can only be calculated using the statutory biodiversity metric created by Defra with an accompanying calculation tool. The calculation tool must be submitted as part of the Biodiversity Gain Plan. The Metric is divided into three sections: area habitats, hedges and watercourses, all of which are calculated separately, with a 10% increase needed for all of the sections relevant to the site in order to meet the biodiversity net gain objective.

2.40. The statutory biodiversity metric calculation tool considers the types of habitats present – as described using the UK Habitat Classification survey methodology – their distinctiveness – which is a fixed value based upon their ecological significance – their condition – as defined in the accompanying criteria-based methodology – the difficulties of recreating them and the risks associated with doing so, and their strategic location, using a mathematical approach to calculate a baseline value of Habitat Units, Hedgerow Units and Watercourse Units.

2.41. If a site has been degraded between 30th January 2020 and the date of the application without those actions being part of a previous planning consent, the baseline value should be calculated in accordance with the highest possible biodiversity value immediately prior to the degradation that can be reasonably supported by evidence.

2.42. The statutory biodiversity metric calculation tool is then used to generate a post intervention value for each type of unit, by entering in the same habitat details for any on-site or off-site habitat retention, enhancement or creation. To satisfy the general condition to be applied to planning consents, the post intervention unit value must be 10% higher than the baseline value in each category.

2.43. For Section 73 applications that are subject to the general condition, the baseline value of the site is considered to be the pre-development situation at the time of the original application. If the Section 73 application changes the post development condition of the site, the original Biodiversity Gain Plan is considered to have already discharged the general condition. If the new application changes the post-development condition of the site, the general condition applies to the new permission and a revised Biodiversity Gain Plan will need to be submitted and approved.

2.44. The statutory biodiversity metric calculation tool does not permit calculations of Habitat Unit value for Priority habitats, as defined under Section 41 of the NERC Act, or those considered to be irreplaceable, which make up the "Very High" distinctiveness habitats. For the purposes of biodiversity net gain, the habitat considered irreplaceable are the

same as those included in the definition within the NPPF, as set out in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. These regulations also amend Schedule 7A inserted into the Town and Country Planning Act so that Local Planning Authorities should only approve biodiversity net gain plans where the "adverse effect of the development on the biodiversity of the onsite habitat is minimised and appropriate arrangements have been made for the purpose of compensating for any impact." The implication is that Biodiversity Gain Plans must demonstrate that any impacts to Priority habitats or irreplaceable habitats have been adequately compensated, even though they are not covered in the statutory biodiversity metric calculation.

2.45. Where there are enhancements proposed to irreplaceable habitats, these are recorded in the statutory biodiversity metric and the value of the enhancements can contribute to achieving 10% net gain. Where there are losses or deterioration of irreplaceable habitats, their value is not included in the baseline and a bespoke compensation package will need to be agreed.

2.46. Where a site has a baseline Habitat Unit value of zero, such as in redevelopment of sealed surface urban areas, there is no basis on which to calculate the 10% requirement, but there remains a need to deliver net gain under planning policy requirements. Local policy could be used to set a minimum gain value on a numerical Habitat Unit basis, or to permit a case-by-case agreement to be reached with developers.

2.47. The biodiversity net gain objective is met if the 10% level is gained by any combination of on-site measures, off-site provision, or statutory biodiversity credits. Statutory biodiversity credits are a government operated last resort means to allow developers to contribute to biodiversity enhancement to satisfy the biodiversity net gain objective if no onsite or local offsite opportunities exist. In making their decision to approve a Biodiversity Gain Plan, Local Planning Authorities must consider the Biodiversity Gain Hierarchy, which is set out in Article 30A of the Development Management Procedure Order and means the following actions in the following order of priority:

1. avoiding adverse effects of the development on onsite habitat with a habitat distinctiveness score, applied in the biodiversity metric, equal to or higher than six;
2. so far as those adverse effects cannot be avoided, mitigating those effects;
3. so far as those adverse effects cannot be mitigated, habitat enhancement of onsite habitat;
4. so far as there cannot be that enhancement, creation of onsite habitat;
5. so far as there cannot be that creation, the availability of registered offsite biodiversity gain;
6. so far as that offsite habitat enhancement cannot be secured, purchasing biodiversity credits.

2.48. The statutory biodiversity metric gives a penalty in Habitat Unit value for off-site provision outside of the Local Planning Authority area or National Character Area in which the development is located. This will only have a modest effect on decision making in the more extensive National Character Areas that cross multiple county borders. Reliance on the national Biodiversity Credits scheme, which could involve off-site habitat anywhere in England is considered to be a last resort where there is insufficient local availability, and the credits are priced accordingly.

2.49. The guidance that accompanies the statutory biodiversity metric includes a number of trading rules, which are assessed within the statutory biodiversity metric calculation tool, with any likely contraventions flagged up. These are summarised below:

- Losses of habitats classed as of 'High' distinctiveness can only be replaced by Habitat Units of the same habitat type
- Losses of habitats classed as of 'Medium' distinctiveness must be replaced by Habitat Units of either:
  - medium distinctiveness habitats within the same broad habitat type (e.g. one woodland type for another woodland type), or
  - any habitat from a higher distinctiveness band
- Losses of habitats classed as of 'Low' distinctiveness must be replaced with units of the same or higher distinctiveness band

2.50. Offsite habitat that contributes to the delivery of biodiversity net gain outcomes will need to be secured for a period of at least 30 years, either through a conservation covenant or a planning obligation (e.g. Section 106 agreement). This also applies to significant onsite habitat enhancement, although it may also be possible to secure such measures by appropriate planning condition. The 30-year period will start once all habitat enhancement measures are completed, as agreed between the applicants and the Local Planning Authority.

2.51. Conservation covenants are private, voluntary, legally binding agreements between a landowner and a registered responsible body, such as a conservation charity or public body, to fulfil conservation objectives and ensure the delivery of wider health and social benefits for communities for the public good. Conservation covenants will continue to be effective even if the land changes hands.

2.52. Any offsite habitat required to deliver biodiversity net gain will need to be registered with Natural England by a person who is required under a legal agreement to carry out habitat enhancement works or maintenance works for that purpose. Full details of the procedures associated with registration are provided in the Biodiversity Gain Site Register Regulations 2024.

2.53. Although the requirement for 10% biodiversity net gain is statutory and so does not need to be included within local plan policies, there is a role for Local Planning Authorities to create strategic policies that can guide delivery, provided they do not seek to alter the framework set out in the Statutory Instruments. This could include identifying areas that present the best opportunities for biodiversity gain, drawing a link with mapped ecological networks and any other relevant, pre-existing strategies. Emerging Local Nature Recovery Strategies are intended to form the basis of such consideration.

2.54. Local policy could be used to set a requirement for a higher level of net gain than the mandatory 10%, or to link to other strategic objectives, but the need for such measures would have to be appropriately evidenced. Provided that sufficient opportunities exist, local policy could also be used to retain the benefits of biodiversity net gain within the Borough, rather than it being delivered remotely with no benefit to local ecological

networks or local communities. This could be framed within parameters applied to the principles set out in the Biodiversity Gain Hierarchy, specifying for instance, the level of net gain required onsite in comparison to offsite.

2.55. In its current form, biodiversity net gain is solely focused on habitats and does not take into account species populations, for which a requirement for additional measures could be specified within local plan guidance. Similarly, measures seeking to secure biodiversity enhancements from application types exempt from the general condition will need to be specified within local plans and cannot be framed as a percentage gain.

2.56. The guidance indicates that commencing development without the approval of a Biodiversity Gain Plan to discharge the general condition would be a breach of planning control that should be subject to enforcement within the existing powers of the Local Planning Authorities. Enforcement powers can also be used to ensure the maintenance and monitoring of any onsite habitat enhancements for biodiversity gain.

2.57. The Planning Practice Guidance considers the information that should be submitted with applications that are subject to the general condition, as set out in Article 7 of The Town and Country Planning (Development Management Procedure) (England) Order 2015:

- "a statement as to whether the applicant believes that planning permission, if granted, would be subject to the biodiversity gain condition;
- the pre-development biodiversity value of the onsite habitat on the date of application (or an earlier date) including the completed metric calculation tool used showing the calculations, the publication date and version of the biodiversity metric used to calculate that value;
- where the applicant wishes to use an earlier date, the proposed earlier date and the reasons for proposing that date;
- a statement confirming whether the biodiversity value of the onsite habitat is lower on the date of application (or an earlier date) because of the carrying on of activities ('degradation') in which case the value is to be taken as immediately before the carrying on of the activities, and if degradation has taken place supporting evidence of this;
- a description of any irreplaceable habitat (as set out in column 1 of the Schedule to the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations [2024]) on the land to which the application relates, that exists on the date of application, (or an earlier date); and
- a plan, drawn to an identified scale which must show the direction of North, showing onsite habitat existing on the date of application (or an earlier date), including any irreplaceable habitat."

2.58. Without this information, the application should not be validated. Local Planning Authorities are encouraged to add any other information requirements to their local validation requirements. The Planning Practice Guidance suggests that this could include information required in relation to planning obligations, such as a draft Habitat Management and Monitoring Plan, or heads of terms in relation to likely Section 106 agreements.

2.59. The guidance states that it would be inappropriate to refuse consent to an application on the grounds that biodiversity net gain will not be met, as it is a post-permission matter. However, as with other comparable matters such as protected species licensing, Local Planning Authorities should consider whether the condition is capable of being discharged on the basis of the development proposals. This should include such matters as the satisfactory application of the Biodiversity Gain Hierarchy, whether the onsite habitat gains are appropriate in relation to other strategies and objectives, and whether sufficient measures would be in place to ensure the maintenance of onsite enhancements for at least 30 years.

2.60. In 2016, the Chartered Institute of Ecology and Environmental Management (CIEEM), with the Construction Industry Research and Information Association (CIRIA) and the Institute of Environmental Management and Assessment (IEMA) produced a document setting out ten good practice principles relating to Biodiversity Net Gain in development:

1. Apply the Mitigation Hierarchy
2. Avoid losing biodiversity that cannot be offset by gains elsewhere
3. Be inclusive and equitable
4. Address risks
5. Make a measurable Net Gain contribution
6. Achieve the best outcomes for biodiversity
7. Be additional
8. Create a Net Gain legacy
9. Optimise sustainability
10. Be transparent

2.61. In 2019, the same three organisations collaborated to produce two follow up documents: *Biodiversity Net Gain. Good Practice Principles for Development. Part A: A Practical Guide* and *Part B: Case Studies*. These are intended to be used to inform and guide the delivery of Biodiversity Net Gain in the UK. It is expected that these documents will form the basis for recommendations on Biodiversity Net Gain within the ecological consultancy industry, including both mandatory and voluntary provision.

Local Policy and Strategy

London Plan

2.62. Chapter 8 of the London Plan, published in March 2021, covers Green Infrastructure and Natural Environment. Key policies that relate to biodiversity are set out below.

2.63. Policy G3 gives Metropolitan Open Land the same status as Green Belt, meaning that it should be protected from inappropriate development and opportunities should be explored for its enhancement, including habitat creation.

2.64. Policy G5 Urban Greening requires that “Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.” Policy G6 includes the clause “Development proposals should manage impacts on biodiversity

and aim to secure net biodiversity gain." It is expected that information will be provided by developers to demonstrate how they will satisfy the London policy requirements for urban greening alongside the information needed to meet the statutory requirement for biodiversity net gain. While habitats created or enhanced for biodiversity can contribute to the site's urban greening score, neither accounting methodology should be used as proof that the other has been achieved.

2.65. Policy G6 Biodiversity and Access to Nature states that SINCs should be protected and goes on to outline the responsibilities of the Boroughs to maintain up to date information about the SINC network, protect conserve and enhance Priority species and habitats, and seek opportunities to create other habitats and features of relevance to urban wildlife. Policy G9 applies similar principles to the city's geodiversity and the designated RIGS and LIGS.

2.66. Policy G7 covers trees and woodland, with the stated aims of increasing tree canopy cover by 10% by 2050 by protecting and maintaining existing trees and woodlands, especially veteran trees and ancient woodlands, and planting new trees and woodlands in appropriate locations.

London Environment Strategy

2.67. The current London Environment Strategy was produced in 2018 and heavily informed the London Plan, considered above. It sets out within Chapter 5: Green Infrastructure London's Priority habitats, of which those that are present in Greenwich are as follows:

- Acid grassland
- Fen, marsh and swamp
- Meadows
- Open mosaic habitats
- Orchards
- Reedbed
- Rivers and streams
- Standing Water
- Woodland

2.68. To support the strategy, in 2019 the Mayor produced a revised London Priority Species List[4], which is made up mostly of those species recorded in London that are:

- National Priority species under Section 41 of the NERC Act
- Bird species on the Species of Conservation Concern Red or Amber lists
- Species that have been assessed as of conservation concern using the IUCN Red List criteria
- Bird species protected under Schedule 1 of the Wildlife and Countryside Act

[4] https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/environment-publications/london-priority-species

2.69. The list also highlights “Opportunity Species”, which are those for which there is the most opportunity to create or enhance suitable habitats and features in open spaces and new developments. Of the Opportunity Species, those that have been recorded in Greenwich recently that might be most suitable for specific conservation action, either on SINCs and other greenspaces or through development management, include:

- Swift
- Peregrine
- Linnet
- House Sparrow
- Black Redstart
- Dunnock
- Starling
- Lesser Whitethroat
- Song Thrush
- Mistle Thrush
- Noctule bat
- Common Pipistrelle
- Soprano Pipistrelle
- Common Frog
- White Admiral butterfly
- Small Copper butterfly
- Large Skipper butterfly
- White-letter Hairstreak
- Essex Skipper butterfly
- Small Skipper butterfly
- Stag Beetle
- Brown-banded Carder-bee
- Red-shanked Carder-bee
- Large Garden Bumblebee
- Shrill Carder Bee

Greenwich Local Plan

2.70. The existing Royal Greenwich Local Plan was adopted in July 2014 to guide development in the Borough and operates alongside national planning policy and the London Plan. A new Local Plan is in preparation and will go out for its first public consultation in the Summer of 2025.

2.71. Relevant Local Policies contained within the adopted Local Plan documents are briefly summarised below.

2.72. Policy OS1 Open Space covers the safeguarding and enhancement of open spaces including the designations of Metropolitan Open Land and Community Open Land as shown on the Policy Map.

2.73. Policy OS4 Biodiversity states that biodiversity and geodiversity will be “protected, restored and enhanced” and includes a presumption against the development of SSSIs, SINCs, Local Nature Reserves (LNRs), RIGs and LIGS. The policy says that enhancement will be particularly encouraged where there are areas deficient in accessible wildlife sites.

2.74. Policy OS(e) Wildlife Deficiency Areas sets out that opportunities to secure the provision of managed wildlife habitats will be taken in or near areas of wildlife deficiency and that opportunities for access will be maximised where there is no conflict with disturbance to wildlife.

2.75. Policy OS(f) Ecological Factors sets out the factors that it is expected will be the particular focus of consideration as part of any development proposals. These include:

- Biodiversity and geological features of the site and the surrounding area
- Surveys of flora and fauna on SINCs and any site over 1ha
- The retention, protection and enhancement of natural features that contribute to the site's biodiversity
- The protection, enhancement and restoration of natural river features and corridors

2.76. Policy OS(g) Green and River Corridors requires the protection of main green corridors and the rivers, canals, and lakes within the Borough, with a presumption against any development that disrupts their connectivity. The main green corridors are stated in the supporting text to be:

- The railway line between Blackheath and Falconwood
- The Plumstead Railway cutting
- The Ridgeway
- The Railway Line between Lee and New Eltham

2.77. The supporting text also makes reference to the Green Chain through Woolwich Cemetery, Plumstead Common and Bostall Woods. The river corridors are listed as the River Thames, the Ravensbourne and the Quaggy River, which together with the Thamesmead canals and lakes are important for aquatic wildlife.

2.78. Policy E(f) Living Roofs and Walls states that new build development proposals should include living roofs or walls within their design, with the living roofs to be designed to maximise biodiversity benefits.

Royal Borough Greenwich Urban Design Guide Supplementary Planning Document

2.79. This document was adopted in October 2023 and is intended to provide clear design principles to developers with the aim of ensuring the submission of high-quality development proposals. If followed, the design principles would deliver places that are safe, and attractive with sustainability, economic and environmental well-being, and quality of life at their core. The document also sets out the standard by which development proposals are to be assessed by council officers and members.

2.80. The most relevant principles in the context of this study are:

PRINCIPLE B.10: CONSIDER AND CONNECT TO STRATEGIC OPEN SPACES / GREEN AND BLUE INFRASTRUCTURE
+ From the outset, developments should be positively planned to actively enhance, expand, connect, and improve the use, access and inclusivity of existing local green and blue infrastructure networks.
+ Existing natural features such as mature trees, hedges, woodland and natural green spaces, are positive assets that should be integrated into the development design where appropriate.

PRINCIPLE B.11: CONTRIBUTING TO NET-GAINS IN BIODIVERSITY AND ECOLOGY

+ Royal Greenwich has a valued network of landscapes, habitats and species that need to be protected and enhanced. Local ecology and ecosystems should be well-considered and protected. Development should aim to more evenly distribute open biodiverse spaces, particularly in the more densely developed areas in the north of the borough where provision is inadequate to the current population.
+ From the outset, new development should consider design interventions and management practices that contribute to a Biodiversity Net Gain to align with the National Planning Policy Framework (2021), 2021 Environment Act, 25 Year Environment Plan, London Plan 2021, and the Royal Borough of Greenwich Core policies.

PRINCIPLE E.4.3: DESIGN TO ENHANCE BIODIVERSITY
+ New development should actively contribute to net gains to biodiversity and should establish ecological networks that are more resilient to current and future pressures.
+ Landscape features that have high biodiversity/ecological value should normally be retained and incorporated within proposals and consideration given to the creation of new habitats.
+ Native species of plants and trees should be prioritised to maximise biodiversity.
+ Large developments should work with specialists to develop biodiversity strategies from the outset.
+ Applicants must speak to an aboricultural and landscape maintenance manager for species selection when working on the Transport for London Route Network.
+ All developments should seek to retain existing trees and enhance their local existing ecosystem. If trees must be felled, at least 10 year old replacement trees should be planted to ensure equivalent carbon capture capacity. The option of planting younger trees is acceptable only where these are proved to be advantageous in terms of enabling a greater amount of carbon capture through rapid growth and also ensuring greater resilience and longevity of the new green infrastructure. If younger trees are planted and subsequently die, these should be replaced to ensure that carbon savings are achieved. Attrition rates should be factored into the planting regime at inception to avoid the requirement for replacements.
+ Rewilding and carbon sequestration opportunities such as soil management,

Summary of Strategic Principles

2.81. Set out below are the suggested principles that should underpin a biodiversity strategy for Royal Borough of Greenwich.

2.82. The core purpose of the strategy should be to conserve and enhance biodiversity by:

- Protecting and enhancing the ecological network of existing sites with nature conservation designations: SSSI, LNR, SINCs, LIGS and RIGS
- Recognising and improving the connections between such sites
- Creating new habitats for biodiversity
- Where possible, enhancing the biodiversity value of land outside of recognised ecological networks

2.83. Although they are consultees, Local Planning Authorities have no real influence over the statutory designation of sites for nature conservation purposes. However, there is scope for them to play a leading role in the maintenance of an evidence based non-statutory network of Local Sites, by regularly reviewing the condition of the sites in line with developments in site selection criteria and by rigorously protecting them within their planning policies and their development management practice.

2.84. All designated sites should be protected by the application of the hierarchical approach to considering ecological impacts within planning decisions, avoiding harm wherever possible, mitigating where harm cannot be avoided, and compensating only as a last resort.

2.85. Habitats considered to be irreplaceable, by virtue of the practical difficulty of effectively re-creating them, and Priority habitats should always be protected from harm.

2.86. The development management system also provides opportunities to enhance biodiversity by guiding the ways in which on-site mitigation and compensation plans are developed along consistent lines, resulting in genuine and long-lasting benefits. This guidance should reflect local and national conservation priorities and should require ambitious targets, albeit in proportion to the scale of the development and the impacts associated with it.

2.87. Off-site net gain and compensatory measures should also be guided by a hierarchical approach, with preference given where possible to securing, restoring, enhancing or maintaining sites with an existing value for biodiversity, over the creation of new habitats, with the uncertainty associated with that and the delay in achieving significant benefit.

2.88. Sites for habitat creation should be identified on a strategic basis, to ensure that they make a valid contribution to the local ecological network and so that the environmental conditions are appropriate to maximise the biodiversity value of the habitat to be created, and to reduce the management effort necessary, ensuring longer-term sustainability of the gains achieved.

2.89. There should always be a preference for compensatory measures, or those providing net gain, to be enacted in close proximity to the site in question, provided that this is appropriate to the local ecological network. This can help ensure that wildlife and ecological resources are integrated within all landscapes and available to all communities, rather than being separate or remote. A focus on habitat creation that reduces any local deficiency in biodiversity resources, or in community access to natural habitats, is also important in addressing issues of fragmentation.

2.90. The value of all measures for the benefit of biodiversity should be assessed according to their contribution to the establishment and development of a coherent ecological network. With designated sites at its core, this network should also provide meaningful ecological connections between sites, both direct and in the form of stepping-stones, and where possible a buffer of compatible habitat that protects the sites from external influences. The network should provide the flexibility for species and habitats to adjust to the impacts of climate change.

2.91. Wherever possible, and appropriate to the biodiversity objectives, sites established or managed for the benefit of biodiversity should also be available to local populations, especially where this provides educational opportunities. Equally, all green space established within or associated with developments should be designed to benefit biodiversity alongside any other function, such as recreation or surface water management.

3. Biodiversity in Greenwich

3.1. This chapter provides an overview of the ecological resources present within the Borough and is intended to provide the context by which priorities for biodiversity protection, enhancement, restoration and creation are identified. Consideration is given to the potential for the creation of key habitats within the Borough, considering factors of environment, landform and land use.

Environmental Conditions

3.2. Greenwich sits within the basin of London Clay that supports most of the city and southern East Anglia, itself situated within a basin of underlying chalk. Between the two are a range of pebble, sand, silt and clay deposits that just predate the London clay – Thanet Sand, Lambeth Group deposits and Harwich Formation – exposed by a fault line that pushed up the bedrock to the south and resulted in a steep scarp slope that now forms an edge to the Thames valley. The reworking of various materials along the scarp slope since the last glaciation is evidenced by deposits of Head, which covers some of the lower Thanet Sand.

3.3. It is these predominantly free-draining elements that cover much of the higher ground in Greenwich, interspersed with pockets of clay. Thus, the soil conditions are predominantly slightly to very acidic, seasonally wet on the London Clay, and free draining elsewhere.

3.4. The faulting also means that there are minor outcrops of chalk at the base of the scarp slope east and west of Charlton railway station, and to the south of Abbey Wood, where a dry valley cuts in to the scarp edge. This proximity to the surface enabled chalk quarrying in Greenwich, although the chalk is generally much deeper across the rest of London.

3.5. Most of the sandy layers of Claygate Beds that were deposited as the last element of the London Clay, and still present more widely north of the Thames, have been eroded leaving just a small outcrop that forms the summit of Shooters Hill.

3.6. Below the fault line scarp are a series of river terrace deposits formed by the floodplain of the Thames when it was at different levels during successive glaciations, culminating in the more recent, alluvial soils of the former, reclaimed grazing marsh.

3.7. The tidal River Thames is a defining feature of the Borough, marking its northern boundary, but there are few other sections of natural watercourse.

3.8. On the southern edge of the Borough an unnamed channel arises on the Royal Blackheath Golf Course (GrBII13) flowing through The Tarn (GrL09) and through a culvert to the Sidcup Road Grasslands (GrBI10) where it joins the Quaggy River. A reasonably natural section of the river then flows between Kidbrooke and Lee – through Sutcliffe Park, where it has been the subject of a restoration project, and Blackheath Park (GrBII12) – before crossing over into Lewisham. Just outside of the Borough, it joins the River Ravensbourne, the last, tidal stretch of which before it joins the Thames, forms the Borough boundary.

3.9. On the eastern edge of the Borough, there is a very short stretch of the River Shuttle arising in Avery Hill Park (GrBII22) flowing east, some of which is culverted. There is also a short stretch of another unnamed watercourse that arises in three channels, one in Oxleas Wood SSSI, and two in Woodlands Farm. The combined stream enters a culvert north of East Wickham and emerges more than three miles to the northeast into South Mere in Thamesmead, just over the border in Bexley.

3.10. Small streams and Sustainable Drainage Systems (SuDS) are a feature of several SINCs, including Well Hall Pleasaunce (GrL23), Maryon Wilson Park (GrBI05) and Cator Park (GrL25).

3.11. Other open water features within the Borough are generally man-made, including a high density on the former Plumstead Marshes, associated with the operation and subsequent redevelopment of the Royal Woolwich Arsenal. These include a series of lakes, or meres, connected by canals, but also some remnant grazing marsh ditches at Belmarsh Prison (GrBII08). Greenwich Ecology Park (GrBI13) contains a recent, purpose-built wetland feature.

3.12. For obvious reasons in a largely urban district, one of the biggest influences on biodiversity in the Borough is the history of land use and development over the last 150 years. Towards the end of the 19th Century, the urban areas of Greenwich, Woolwich, Lee and Charlton in the north and west of the Borough were well established, albeit with larger areas of parkland and common.

3.13. The eastern and southern parts were, by contrast, rural, with extensive areas of farmland and woodland. Large areas of Greenwich and Plumstead grazing marshes were still agricultural, although with a growing amount of industry on the Greenwich peninsula, and the Royal Woolwich Arsenal spreading onto Plumstead Marshes.

3.14. With a few exceptions, the best sites for biodiversity are the ones with the longest and most stable management history, which provides continuity of conditions that typically leads to an accumulation of species over time. Where a site's history does not include any of the intensification or mechanisation of agriculture practice that took place after the Second World War, and that has created wider uniformity in structure and fertility of soils, small scale variations in environmental conditions further encourage biodiversity.

3.15. This explains the significance of the sites that offer the highest quality habitats from a nature conservation point of view, particularly the large commons of Blackheath, Woolwich and Plumstead and the Ancient Woodland complexes around Shooters Hill and Bostall Heath.

National Character Area

3.16. The Borough is within two National Character Area (NCA): 81 Greater Thames Estuary, on the northern edge below the scarp slope, and 112 Inner London, the border of which roughly follows the eastern border of the Borough.

3.17. NCA81 Greater Thames Estuary, includes the low lying, former grazing marsh areas of Greenwich and Plumstead Marshes together with the terraces deposited by the Thames

when the river was at higher levels. The NCA takes in lower lying ground on either side of the Thames northeast to Harwich, in Essex, east to Whitstable, in Kent, and upstream as far as Wapping.

3.18. The NCA profile document notes the dominance of urban and industrial land uses in the London area in contrast to the dispersed settlements and agricultural land use further east, with extensive designations for over-wintering birds and for other habitats and species. The importance of post-industrial land for open mosaic habitats and invertebrates is also highlighted. Three of the Statements of Environmental Opportunity are focused on the more ecologically valuable areas of the wider estuary, but the fourth encourages a strategic approach to development, recognising the importance of green infrastructure and a need to address the impacts of climate change and the maintenance of important environmental features.

3.19. The area covered by NCA112 Inner London is predominantly urban, but with a strong character of green infrastructure in the form of parks, reservoirs, river valleys, canals, nature reserves and allotments away from the most intensely developed areas. The Statements of Environmental Opportunity include a focus on protecting existing green spaces for all of the services they provide to London's residents, with particular recognition of the value of woodland and tree cover as an "urban forest". The importance of connecting people to nature is also recognised. A fourth opportunity is focused on the River Thames, upstream of NCA81.

Local Ecological Networks

3.20. Figure 3.1 shows all of the sites designated for nature conservation and biodiversity within the Borough.

Sites of Special Scientific Interest (SSSI)

3.21. Oxleas Woodlands SSSI is the only statutorily designated nature conservation site within Greenwich and forms the largest part of the M016 Shooters Hill Woodlands SINC. It is designated primarily as one of the most extensive areas of old woodland on London Clay in Greater London, and for the associated presence of species rare in the area. It includes mostly acidic, dry oak woodland with communities more associated with neutral soils on the lower, damper areas. The presence of a large population of Wild Service-tree (*Sorbus torminalis*) is noteworthy together with shrubs more typical of chalky soils such as Wayfaring-tree (*Viburnum lantana*) and Dogwood (*Cornus sanguinea*).

3.22. The NPPF is clear that development within a SSSI, or outside of one, should not normally be permitted if it is likely to have an adverse impact upon the site.

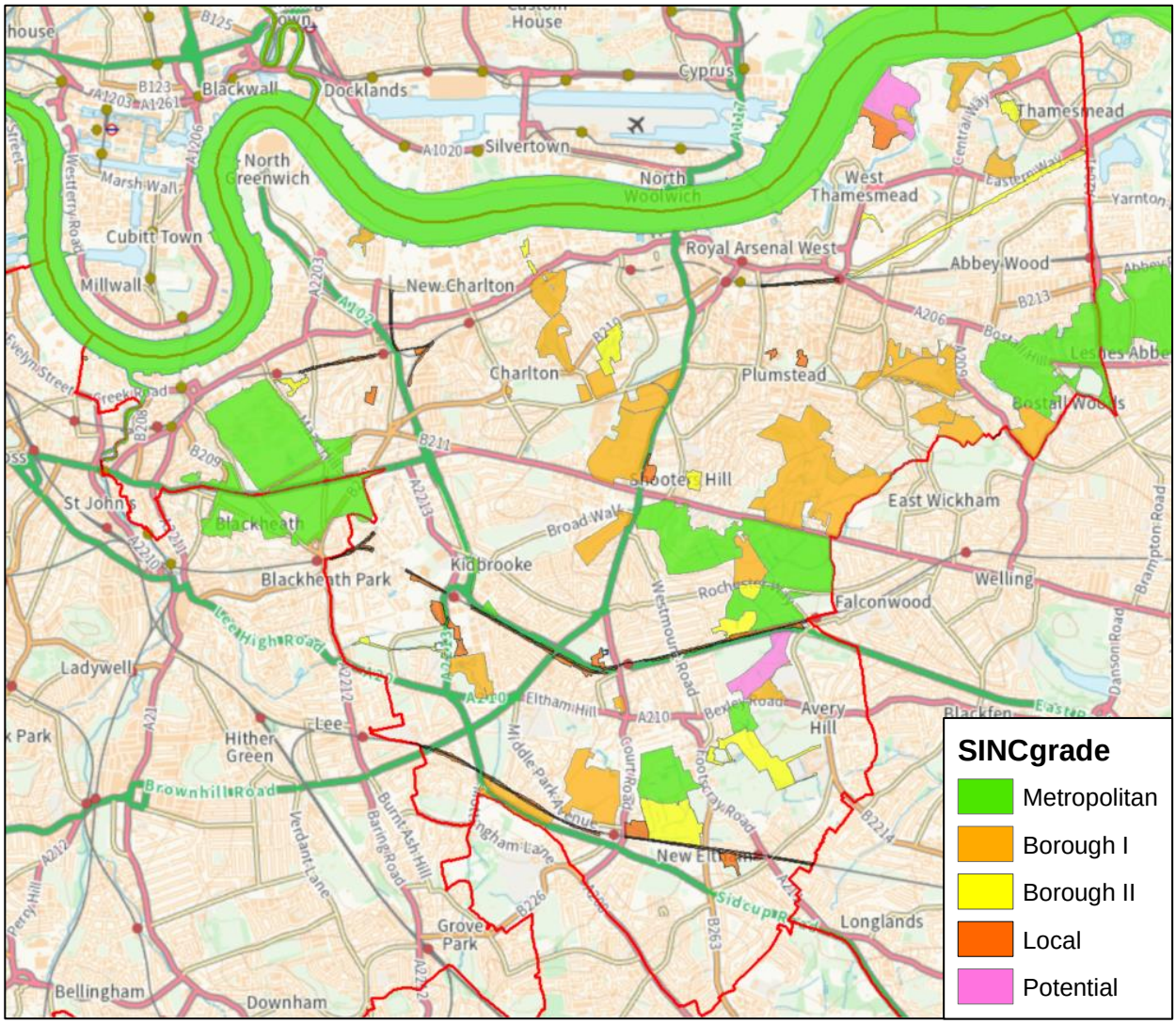
Local Nature Reserves

3.23. There are three Local Nature Reserves (LNRs) designated within the Borough:

- Oxlease Wood LNR, incorporating the Oxleas Woodlands SSSI, with adjacent areas including Eltham Common (within M016) and Oxleas Meadow (GrBI16)
- Maryon Wilson Park and Gilbert's Pit LNR, making up two thirds of GrBI05
- Sutcliffe Park LNR, with a more restricted boundary than GrBI21

3.24. LNR is a statutory designation for sites that are locally important for wildlife, geology, education or enjoyment, with an underlying remit to protect their wildlife. They are designated by Local Planning Authorities and are managed either by them as landowners or by other partners. There has to be an aim to allow at least partial public access where this does not result in disturbance of wildlife.

Figure 3.1 – Designated nature conservation sites (SINCs) in Greenwich – SSSI and LNR boundaries are not shown but all lie within SINCs.



Sites of Importance for Nature Conservation

3.25. Sites of Importance for Nature Conservation (SINCS) within the London Boroughs are categorised according to their ecological significance, although the thresholds between

categories are not clearly set out within the London Wildlife Site Board advice note on site selection[5].

3.26. Sites of Metropolitan Importance (SMI) are selected by the Mayor to represent the best examples of the habitats present across London as a whole. There are six SMI wholly or partly within Greenwich:

- M015 Lesnes Abbey Woods and Bostall Woods; a large area of woodland extending across the Borough boundary into Bexley
- M016 Shooters Hill Woodlands, which includes Oxleas Woodland SSSI and broadly corresponds to the Olea Woods LNR
- M042 Pippenhall Meadows, a collection of small meadows and pastures including dry and damp grassland
- M069 Blackheath and Greenwich Park, parkland including acid grassland and ancient trees
- M070 Royal Blackheath Golf Course, designated for its population of Great Crested Newts
- M132 Kidbroke Green and Birdbrook Road Nature Reserve, two small sites with ponds supporting a diverse amphibian population

3.27. In addition, M031 River Thames and Tidal Tributaries extends through all of the London Boroughs and fronts on to Greenwich.

3.28. At a Borough level, SINCS are divided into two grades, Sites of Borough Importance I (SBI) and Sites of Borough Importance II (SBII). These sites were last reviewed in 2024 resulting in totals of 20 SBI and 12SBII.

3.29. The SBI range from a 0.5ha grass lawn (GrBI14) to an 84.4ha mosaic of park, golf course, woodland and farmland (GrBI06), with an average size of 16.1ha. They are predominantly grassland, including larger areas of old grassland on Plumstead Common (GrBI01), Woolwich Common (GrBI12) and Eltham Palace Fields (GrBI04), four cemeteries (GrBI07, 18, 19, 20), parks, gardens and a churchyard (GrBI22). They also include several smaller, post-industrial mosaics of open water, woodland and grassland derived from the Royal Woolwich Arsenal (GrBI2, 11, 15, 17) together with the purpose-built wetland site at Greenwich Ecology Park (GrBI13) and the river restoration project in Sutcliffe Park (GrBI21).

3.30. The SBII range in size from 1.2ha of remnant grazing marsh ditch (GrBII08) to 21.6ha of golf course (GrBII13) with an average of 6.8ha. They include recent woodlands (GrBII1, 23, 24), a section of river (GrBII12), and an abandoned grassland (GrBII09), but the majority are areas of park or garden. They also include habitats associated with a 1.7mile linear walkway on a covered sewage pipe bank (GrBII06)

3.31. Sites of Local Importance (SLI) are generally smaller green spaces that support some biodiversity, often in areas where there is otherwise little semi-natural habitat. There are currently 16 SLI identified in Greenwich the smallest of which is 0.3ha of tidal river

[5] Flowchart of Designation Process for Non-Statutory Wildlife Sites (london.gov.uk)

(GrBII19) and with an average area of 3.3ha. They include four sections of railside (GrL27, 28, 29, 30), five more formal parks and gardens and three parks with more semi-natural habitat (GrL05, 19, 22). Three are small areas of trees/woodland that have persisted in otherwise developed areas (Gr3, 20, 21).

3.32. The total area of all 54 SINCs (excluding the River Thames) is nearly 840 hectares, approximately 18% of the administrative area, which compares to a figure of 20% for London as a whole[6].

3.33. There is no statutory protection for SINCs, although there is a presumption that they will be protected by the planning system. Many are in private ownership, which creates a vulnerability not only to development pressure, but to inappropriate management or neglect.

Geological Sites

3.34. There is a single geological SSSI within the Borough, Gilbert's Pit, Charlton, which provides one of the most complete sections through the Lower Tertiary beds in Greater London. This provides an opportunity to see the geological sequence from Chalk, through Thanet Sands and Woolwich Beds to the Blackheath Pebble Bed at the original surface level.

3.35. There are three other sites in Greenwich designated for their geological significance:

- Dog Rocks Regionally Important Geological and Geomorphological Site (RIGS) (GLA 8); these are a collection of boulders within a former quarry on Plumstead Common
- Bleak Hill Sandpits Locally Important Geological and Geomorphological Sites (LIGS) (GLA 56); the remains of three pits at the east end of Plumstead Common, within the SINC (GrBI01), showing sections of a similar composition to Gilbert's Pit, although generally obscured
- Wickham Valley Brickworks Complex LIGS (GLA 57); the remains of three pits and the brickyards that used the excavated materials. One of the pits is now Rockliffe Gardens, which is part of the Woolwich Cemeteries and Rockcliffe Gardens SINC (GrBI20)

3.36. There is no statutory protection for these sites, although there is a presumption that they will be protected by the planning system, reinforced where they coincide with SINCs.

Habitats and Species

London Priority Habitats

3.37. The presence of Priority Habitat should lead to the designation of the site as a SINC, and so these habitats should be effectively protected within the SINC network. The London Priority Habitats represented within the Borough are considered below (with equivalent national Priority Habitat names in brackets). Under each heading is mention of the related

[6] London Environment Strategy

non-Priority habitat types. In combination, this gives an overview of the Borough's semi-natural habitat resources and the opportunities for habitat creation and enhancement.

Acid Grassland (Lowland Dry Acid Grassland)

3.38. The geology over much of Greenwich results in free-draining, acidic soils derived from the sands and gravels deposited before and after the London Clay, and by the river Thames during the last series of glaciations. This is most obviously seen on the larger commons – Blackheath, Woolwich and Plumstead – where the soil was not productive enough for agricultural cultivation to be worthwhile. Other sites that have retained a more natural character include the cemeteries, whose functional management has enabled the natural habitat to persist.

3.39. Acid grassland is often not particularly species rich, and many of the key species are small and inconspicuous, spring and early summer annuals. This can result in a perception that it is of less value than more flowery neutral grasslands, although it is generally less common as a habitat than other grassland types and with characteristic species.

3.40. Where there are opportunities for grassland habitat creation on suitable substrates, acid grassland should be the first-choice habitat, although some element of nutrient reduction may also be needed depending on past land uses. Typically, returning sites on sands and gravels to a mineral soil by the removal of topsoil will result in the establishment of acid grassland. Although acidic grassland sites are generally nutrient poor, there is still a need for regular management in order to maintain their condition, both by reducing the dominance of coarser grasses and by restricting the spread of woody scrub.

3.41. It is possible to create acidic conditions on biodiverse roofs and in other artificial situations by using an appropriate, free-draining substrate, which should be considered on sites in proximity to the natural areas of acid grassland. Such habitats are also likely to be of particular value to invertebrates.

Meadows (Lowland Meadows)

3.42. Older grassland habitat on the London Clay and other less acidic soil types is more productive and generally reflects the National Vegetation Community MG5 classification typical of hay meadows in lowland England. Even here, the communities show species mixes that are on the acidic side of neutral.

3.43. Some significant areas of this Priority habitat remain on the southern half of Woolwich Common (GrBI12), on Eltham Palace Fields (GrBI04), at Greenwich Cemetery (GrBI07), in Shrewsbury Park (part of GrBI06) and at Oxleas Meadow (GrBI16). Management of these sites has not been optimal in recent years and so the habitat present is not as diverse as would be expected on hay meadows with a longer history of favourable management, and there is a lack of unimproved grassland indicator species.

3.44. These grassland habitats are vulnerable to inappropriate management practices, including overgrazing, which reduces species diversity and creates gaps in the sward that allow generalist "weed" species in. However, they can also suffer from a lack of

management pressure, which results in the dominance of coarser, more competitive grasses at the expense of diversity and eventually the loss of open grassland to scrub, as has happened at Deansfield (GrBII09).

3.45. The creation of floristically diverse grassland is possible in a relatively short period of time, provided that the site is well prepared, ideally to achieve a low nutrient status in the soil. Grassland creation should involve a locally derived mix of species rather than using generic, “off the shelf” seed mixes, which invariable contain species that may not be present in the area, leading to an overall homogenisation of grasslands across lowland UK. Using green hay from local, well-managed meadows can be the best way of producing a locally appropriate grassland mix.

Woodland (Lowland Mixed Deciduous Woodland)

3.46. The principal areas of woodland in the Borough are the Ancient Woodlands that make up the Shooters Hill complex – Oxleas Wood, Jack Wood and Shepherdleas Wood – Bostal Woods and the small part of Lesnes Abbey Woods that extend into Bexley. Ancient Woodland is defined as land under continuous tree cover since 1600, but there are additional, contiguous areas of non-Ancient, secondary woodland that complement and connect the oldest sections and that is still classed as Priority habitat.

3.47. Mature secondary, Priority woodland habitat can be found in some of the parks, most notably Maryon and Maryon Wilson Parks (GrBI05), and Shrewsbury Park (part of GrBI06).

3.48. More recent secondary woodland can be found at locations including:

- Westcombe Woodlands (GrBII23), the east end of Plumstead Common (GrBI01) and the southern part of Woolwich Common (GrBI12), where it has established naturally
- The Tarn (GrL09), Eaglesfield Woods (GrBII24), Repository Woods (GrBII01) and Mycenae Gardens (GrL20), all the remnants of large gardens
- along railsides
- along watercourses such as the River Quaggy

3.49. It is unlikely that much of this would be considered as Priority woodland habitat due to species composition, structure and form. Most of this habitat includes a significant proportion of non-native species in the canopy and lacks an established woodland structure and ground flora.

3.50. Opportunities for new woodland creation within the Borough are likely to be limited, with little available land of sufficient extent but no existing habitat or amenity value. Planting trees on open habitats – especially grassland – should be avoided, as any existing value will soon be lost, and it will take decades for any new value to be realised. This effect can be seen on the Sidcup Road Grassland SINC (GrBI10) where valuable grassland habitat was lost to the planting of Harmony Wood.

3.51. Guided natural regeneration is a better option than tree planting, as it results in a gradual transition between open and wooded habitats with benefits to biodiversity throughout. It

also leads to a more natural structure, with open glades and rides more easily incorporated by minimal selective thinning. This approach also avoids the environmental impact and cost of tree planting, in terms of the use of nursery stock, watering, tree guards and intensive establishment management.

3.52. Areas of more recent woodland, naturally established or planted, could be enhanced to improve their biodiversity value by altering their species composition and managing for more structural diversity, in terms of glades and rides, but also vertical structure.

3.53. Many other parks and open spaces support mature trees, both native and non-native, that provide canopy cover, although not woodland habitat in the proper sense. Some of these trees would be likely to be considered as veterans if subjected to a full arboricultural assessment, and some of these will be derived from pre-existing landscape features. It would be possible to create a vertical woodland structure in some of these areas by introducing understorey and shrub planting, which would have a benefit for biodiversity, but may not be compatible with existing recreational uses and may encourage misuse or affect perceptions of personal safety.

3.54. Small areas of wet woodland have been created within the Greenwich Ecology Park (GrBI13) and in Sutcliffe Park (GrBI21), although these are unlikely to be considered as Priority habitat. Versions of this habitat are also present along some of the watercourses, such as the Quaggy River at Blackheath Park (GrBII12) and its tributary along Sidcup Road (part of GrBI10), but these are also unlikely to be considered as Priority habitat.

3.55. Opportunities for the creation of new wet woodland are limited due to the specific environmental conditions required, but it could form part of a strategy to re-naturalise the watercourses within the Borough.

Orchards (Traditional Orchards)

3.56. There are no sites identified as Traditional Orchards in the Borough, although fruit trees were planted more recently to create the Academy Place Orchard (GrL19), which has since been neglected.

3.57. The important elements of a traditional orchard are large, well-spaced fruit trees – in contrast to the more recent approach of small, densely planted trees – and semi-natural herbaceous vegetation beneath the trees managed in an extensive manner.

3.58. Any new orchard creation should include the establishment of a species-rich meadow grassland in addition to planting fruit trees. The planting of fruit trees in existing grassland of lower quality, particularly modified grassland dominated by Perennial Rye-grass, is a relatively easy way to generate a biodiversity enhancement. Ideally, the grassland management regime would be adjusted at the same time to encourage a more diverse and natural sward and increased floristic diversity and abundance.

Fen, Marsh and Swamp (Lowland Fen) and Reedbed

3.59. Wetland habitats are not common within the Borough through a combination of the generally free draining geology, a lack of watercourses and the development of much of

the lower-lying areas that once would have supported natural wetlands, specifically grazing marsh divided by ditches and fleets. The only real remnants of this are the ditches at Belmarsh Prison (GrBII08), although even those have been affected by development.

3.60. Within the Borough, there is no natural Lowland Fen vegetation, which typically forms along river valleys and other low-lying areas where the water table is at or near the ground surface for most of the year. The wetland sites that feature reedbeds and other emergent and marginal vegetation akin to Lowland Fen are all manmade. These include the Greenwich Ecology Park (GrBI13) and the river restoration project in Sutcliffe Park (GrBI21), which both include a mosaic of wetland habitats.

3.61. There is a concentration of man-made wetland features in the Thamesmead area, on land that was formerly grazing marsh. These include the moats surrounding the munitions storage tumps, now connected by canals to meres created in the late 20th Century as the site was being redeveloped. The moats and the margins of the meres support stands of Common Reed (*Phragmites australis*) that would qualify as Priority habitat, together with emergent and marginal plant communities, although these are generally in an urban setting.

3.62. Naturalisation of channelised sections of watercourses and other wetland creation schemes would allow the wider development of this habitat type.

Rivers and Streams (Rivers)

3.63. As a Priority habitat, the definition of rivers is quite specific and relies upon the naturalness of the geomorphology and the presence of key species. As such, the predominantly modified water courses found within the Borough are not likely to qualify, with the possible exception of the recently re-naturalised stretch of the Quaggy River within Sutcliffe Park (GrBI21). Other sections of the Quaggy are more or less natural, although they are constrained within the confines of residential development or recreation grounds.

3.64. Although complex, the re-naturalisation of other stretches of watercourses provides a significant opportunity as a route to the enhancement of biodiversity. The condition of watercourses in the Biodiversity Metric involves a detailed methodology that reflects river geomorphology as well as habitat and species diversity. Naturalising rivers that are currently channelised provides a significant opportunity to deliver net gain in biodiversity.

3.65. Watercourse Units are accounted separately within the Biodiversity Metric and so any development site that includes a watercourse will have to secure 10% net gain for its presence or any impacts to it, in addition to other habitat impacts.

Open Mosaic Habitat (Open Mosaic Habitat on Previously Developed Land)

3.66. There are several areas identified by Natural England as Priority open mosaic habitat within the Borough, according to MagicMap[7]. Some of these appear to be inaccurate, such as a former playing field in Academy Place and an extensive area around the hospital car park on the edge of Woolwich Common. Areas identified on the Greenwich

[7] https://magic.defra.gov.uk/MagicMap.html

Peninsula have been, or are being, redeveloped, with little evidence of any ecological features of significant biodiversity value remaining.

3.67. The section of Thamesmead that is yet to be re-developed provides what is probably the only genuine area of Open Mosaic Priority habitat remaining in the Borough. Some of that is already allocated for development, but whatever remains should be enhanced and managed to provide and retain the key features of open mosaic habitat.

3.68. The circumstances that led to the high biodiversity value of open mosaic habitats, namely a significant period of abandonment after demolition of redundant industrial use, seem less likely to occur in the current economic situation. However, because of its anthropogenic nature, open mosaic "brownfield" habitats can be created relatively easily anywhere with access to the right materials.

3.69. Key factors for the successful creation of open mosaic habitats include appropriate substrates, including a high proportion with low nutrient status and that are freely drained, to provide the droughty conditions that cause flowering plants stress, which in turn leads to greater production of flowers. A mosaic of habitat structures and types providing flower forage, nesting habitat and bare ground is the aim, preferably with some seasonal and permanent wetland features.

3.70. Biodiverse roofs can be considered to be a form of open mosaic habitat, depending on their design and management, but would not fall under the Priority habitat description.

Standing Water (Ponds)

3.71. Priority habitat status for ponds is largely based upon distinct vegetation communities, the presence of nationally rare or scarce plants or animals (such as Great Crested Newt), or exceptional assemblages of plants or animals. Only water bodies below two hectares in size are considered to be ponds.

3.72. Older maps show that at one time there were numerous ponds in parts of the Borough, particularly on the London Clay around Shooters Hill, presumably for agricultural reasons, to water livestock in a pastoral landscape. Elsewhere, ponds are likely to have been man made, either as a result of digging gravel pits and other quarrying operations, or as elements of park and garden landscaping.

3.73. The SINCs on the Royal Blackheath Gold Course (M070), and on the Kidbrooke Green and Birdbrook Road Nature Reserves (M132) have ponds that are the core features of their designation because of the amphibian populations they support. Ponds are also a notable feature of Woodlands Farm (part of GrBI06) and Twinkle Park (GrL24), although the latter is artificial.

3.74. On the London Clay, new pond creation should be feasible, but to provide a valuable biodiversity resource, ponds should be associated with appropriate semi-natural terrestrial habitats and corridors that connect them to other wetlands. Cluster of ponds are more effective at maintaining populations of aquatic species than individual ones. Not all ponds need to retain water year-round, with seasonal or ephemeral features equally valuable for different types of species.

3.75. Larger bodies of standing water are infrequent within the Borough, with only the Thamesmead meres exceeding the size threshold of ponds.

Other National Priority Habitats

Wood Pasture and Parkland

3.76. This habitat has a broad definition, but sites generally have open grown trees, including some that are ancient or veteran, and origins in medieval hunting forests and/or designed landscapes from before the 19th Century. There is often a history of agricultural management, in the form of grazing, which maintains an open landscape, but where this practice has ceased, secondary woodland can be established around the mature trees. Sites are often of high significance for invertebrates, particularly those associated with dead wood.

3.77. The Natural England inventory of this Priority Habitat is mapped at a site level but includes some areas in Greenwich that clearly do not meet the definition, including Blackheath where there are hardly any trees, and Eltham Common, which is woodland. Greenwich Park (M069) is probably the most significant parkland site in the Borough, but some of the smaller parks meet some of the criteria, especially Maryon Wilson Park (part of GrBI05).

3.78. This is not an easy habitat to create, as the tree element can take hundreds of years to develop, but secondary woodland could be thinned to replicate the more open canopy that is characterised by wood pasture. Existing sites need to be well-managed to extend the life of their ancient and veteran trees and to plan for their succession from other tree stock. Enhancement can be delivered by better management of ground level habitat.

Hedgerows

3.79. The Priority habitat description for hedgerows is an inclusive one, and it is likely that most of the Boroughs older hedgerows would qualify, and some that are more recent. Old hedgerows are a feature of Eltham Place Fields (GrBI04), Avery Hill Fields (GrBII22) and Gravel Pit Lane (GrBI03).

3.80. Hedgerows offer the most benefit for a wider range of biodiversity where they are accompanied by other semi-natural habitats and in particular rough, grassy margins. However, even isolated hedgerows can provide habitat structure that enable more mobile species to move through otherwise unfavourable landscapes.

3.81. Hedgerow creation is straightforward, although there may be limited opportunities within the Borough to create new hedgerows that can make a meaningful ecological contribution. Habitat Units derived from hedgerows are accounted separately in the Biodiversity Metric, and so there may be a need for hedgerow creation to achieve 10% net gain on any site with existing hedgerows in addition to any other habitat requirements.

Other Habitats

3.82. The remaining grassland resource is largely confined to amenity grassland in parks and open spaces, and occasional areas of road verge. In places these have been diversified by relaxing the frequency of mowing and/or seeding with flowering species both native and non-native. This approach should be encouraged and with consistent and appropriate management, should lead to better quality grassland over time.

3.83. Allotments provide a small-scale mosaic of habitat types and often include semi-natural features such as boundary hedging, rough grass margins and mature trees. They have a particular role in encouraging a diversity of species, especially invertebrates, providing stepping-stones in areas without other habitats and supporting populations that can then permeate the surrounding landscape.

3.84. Gardens can be very similar in function, particularly where the road layout is more traditional, which results in larger areas of gardens backing on to each other, rather than in many modern residential developments where the garden spaces are dispersed and separated. Gardens are estimated to occupy 24% of the land area of Greater London as a whole, demonstrating the potential benefit that they can provide.

3.85. Street trees have some biodiversity benefit, depending on their species and how they interact with each other and nearby semi-natural habitats, but they also provide a range of other environmental benefits that make up their overall importance. Increasingly, one of their key ecological functions in denser urban areas may be in providing a link between ground level habitats and those provided on roof tops.

3.86. Biodiverse roofs, taking in those with more typical grass-based habitats and those offering open mosaic “brownfield”, conditions can make a significant contribution to local biodiversity and do so best when they extend and are connected to ground base habitats.

Priority Species

3.87. The presence of a significant population of a Priority Species should lead to the designation of the site as a SINC and many of these species are also legally protected by UK and European legislation. Those of specific relevance to the Borough are considered below, with reference to the London Priority Species List and Opportunity Species.

3.88. There is a general pattern of priority actions for all species of conservation significance, which is: to improve information about distribution (including negative survey results), protect and enhance existing populations, improve connections between populations, and then encourage the expansion of populations. The specifics of these actions depend on the species and their ecological requirements.

Amphibians

3.89. All of our native amphibians are Priority Species, although only Common Frog has been selected as an Opportunity Species in London. In Greenwich, all five native amphibians are present, but Common Frog probably has the widest distribution, and conservation measures to strengthen its population are likely to benefit all amphibians.

3.90. The recorded distributions of Common Frog, Common Toad and Smooth Newt[8] are broadly similar, with presence confirmed to the south and west, from Greenwich to New Eltham, and with outliers to the east of Shooters Hill. Common Toad is apparently the least common of these three species. It is possible that all of these species are under-recorded, with garden habitats and allotments being particularly suitable, provided there are ponds or other water features in which they can breed.

3.91. The legally protected Great Crested Newts is only known to be present in the southern half of the Borough and is the reason for the designation of the Royal Blackheath Golf Course as a SINC (M070), and a contributory factor to the designation of the Kidbrooke Green and Birdbrook Road Nature Reserves SINC (M132). Mitigation and compensation for impacts to Great Crested Newt should be dealt with through the development management process and licensing requirements.

3.92. Palmate Newt is the least common species in Greenwich – and in London as a whole – with the only recent record coming from the Kidbrooke Green and Birdbrook Road Nature Reserves SINC (M132).

3.93. Amphibians spend more time on dry land than they do in waterbodies, so habitat creation aimed at these species is needed alongside pond creation, to provide suitable opportunities for foraging, shelter and overwintering (hibernacula). Rough grassland, mixed scrub, woodland and hedgerows with a dense understorey, and log piles are all beneficial.

Reptiles

3.94. Of the four common, native reptiles, only Common Lizard and Slow Worm are known to be present in Greenwich[8], and neither appears to be widespread. Common Lizards are only recorded from Thamesmead and Slow Worms are present in there widely separated areas away from the Thames, however both are likely to be under-recorded. The open sections of the railsides are likely to offer suitable habitat and a means of dispersal, but records are less likely to be forthcoming from them. Gardens and allotments can also provide suitable conditions for these species.

3.95. Reptiles are legally protected from harm and should be considered as part of the development management process, with appropriate mitigation and compensation measures required where any impacts are identified. More information about the distribution of these species would be helpful in determining the appropriateness of enhancement measures or translocations and may also present opportunities for strengthening connectivity, which is very important for reptiles.

3.96. Open rough grassland or herbaceous vegetation with plentiful invertebrate life, and places for shelter and over-wintering – such as log piles – are required by reptiles. Common Lizards are more able to adapt to dry habitats, previously developed land and open mosaic habitats, while Slow Worms favour established and more lush vegetation.

[8] Amphibians & Reptiles Atlas - GIGL

Preventing the development of dense shade in these situations is key to maintaining populations over a wider area, particularly with linear habitats.

Bats

3.97. Eight bat species had been recorded in Greenwich up to 2015[9], although it is very likely that understanding of bat populations in the Borough is incomplete. Common and Soprano Pipistrelle are by far the most widely distributed, as would be expected by there more eclectic habitat requirements.

3.98. Larger woodlands and other more extensive, established semi-natural habitats featuring hedges, trees and waterbodies are likely to be the areas of most significance to bat populations at a wider level, particularly those that are well connected to each other. There are no SINCs that are known to be of particular significance to roosting bats.

3.99. One of the Opportunity Species identified for London is Noctule, a high-flying species that often forages over larger water bodies and that roosts exclusively in large cavities in trees. Veteran and mature trees in parks and open spaces are likely to be very important for this species, but the provision of large bat boxes in areas lacking in suitable natural features could provide a significant benefit.

3.100. The other Opportunity Species are Common Pipistrelle and Soprano Pipistrelle, both of which favour buildings for maternity roosts, usually in proximity to semi-natural habitats. For these and other species that roost in buildings, protection through the development management system is essential to the maintenance of populations at a favourable conservation status. This will involve adequate and appropriate mitigation for any adverse impacts to roosts, alongside enhancement to provide new roosting opportunities where they will have the most benefit, particularly where there are good connections to suitable habitats for commuting and foraging. Integrated bat boxes and bespoke roost spaces should always be preferred to external boxes as they provide a more sustainable and long-lasting benefit.

3.101. In addition to roost locations, bat populations require good quality semi-natural habitats to provide foraging opportunities and connectivity through the landscape so that these can be accessed. In addition to maintaining and enhancing foraging habitat and habitat connections, the management of artificial light is crucial, as it is well-established that light can serve as a barrier to the movement of bats, some more than others. Artificial light can also draw flying insects away from the habitats in which the bats forage.

Birds

3.102. Urban areas can provide habitat for a number of species of national conservation concern, including the London Opportunity Species Swift, House Sparrow, Dunnock, Starling, Mistle Thrush and Song Thrush. The populations of all these species could be supported by the inclusion of high quality, semi-natural green space within new developments and the inclusion of nesting opportunities within new buildings. The use of integrated nest boxes provides a sustainable and long-lasting benefit to these species, in contrast to the

[9] The Bat Atlas of London | London Bat Group

use of external boxes, which rapidly deteriorate. Although not an Opportunity Species, House Martin populations are also declining rapidly, and it is another species that could easily be accommodated within new developments.

3.103. There are two other bird London Opportunity Species that have more specific requirements. Breeding pairs of Peregrines in London are principally distributed close to the Thames and the provision of artificial nest sites as an enhancement measure should only be considered where there is a reasonable chance of them being adopted and successful. This would have to include a detailed assessment of the suitability of the building, the history of Peregrine activity in the area, the best type and location of artificial nest site for the building, and the likelihood of disturbance, amongst other things.

3.104. Up to date information regarding breeding activity of Black Redstart in Greenwich is hard to come by, but the Borough is within the main population centre in London, which is along the Thames in East London and the Lea Valley. The provision of habitat and nesting opportunities for Black Redstart should only be considered where there is reasonable evidence that they will be utilised. However, habitat that is suitable for this species – such as biodiverse roofs and open mosaic habitats – is likely to have other benefits, particularly for invertebrate populations.

Invertebrates

3.105. Buglife has identified Greenwich Park and Thamesmead within its Thames Estuary South Important Invertebrate Area[10]. These areas have been identified on the basis of concentrations of records of nationally or internationally significant species and are intended to highlight landscapes where planning and other land use decisions should be informed with detailed and high-quality information about invertebrate populations.

3.106. Greenwich Park is primarily included for the presence of species associated with its ancient and veteran parkland trees, although its acid grassland habitat also supports a diverse fauna. Similar habitats are present across the Borough, although generally as smaller habitat patches, and could be expected to also support species of conservation significance.

3.107. Thamesmead is included in the Important Invertebrate Area for species associated with the open mosaic habitats that resulted from its previous industrial use as part of the Royal Woolwich Arsenal. Here, the combination of multiple substrates, open vegetation, floristic diversity and scattered scrub have led to the accumulation of a wide diversity of species. Its situation, in the warm southeast of the UK and as part of the landscape of the River Thames mean that a high proportion of those species are also of raised conservation status in a local and national context. There is little comparable habitat remaining in Greenwich following the modern wave of redevelopment.

3.108. With the right conditions, and in an appropriate location, good open mosaic habitats can be created for invertebrates and be populated by good assemblages of rare and scarce species in a short period of time. This is because of the dispersive tendencies of many invertebrates, as a result of which they require networks of suitable sites at the landscape

[10] Important Invertebrate Areas - Buglife

scale in order to maintain thriving populations. Even relatively small areas of open mosaic habitat, on biodiverse roofs or at ground level, can effectively support invertebrate diversity.

3.109. Any of the larger SINCs, and other sites, that support a variety of semi-natural habitats within a functioning landscape are likely to support good invertebrate populations, including the London Opportunity Species butterflies and bumblebees that are found in Greenwich, which include nationally significant species such as Moss Carder-bee and Brown-banded Carder-bee. Older sites with a longer continuity of positive management, including old and Ancient woodlands are likely to be important, as are habitat connections to these areas.

3.110. Habitat features of particular importance to invertebrates in general include flower-rich grassland, exposed substrates in a varied topography (e.g. banks of sands and gravels), permanent and seasonal wetland features, dead wood and patchy scrub. Creating, restoring or enhancing these habitats in combination would have a positive impact on local populations.

3.111. The London Opportunity Species Stag Beetle is known to be present in the Borough and is reliant on the availability of dead wood, particularly the stumps of larger trees, in which the larvae develop over seven years. The retention of such features is crucial to their survival, and this resource can be mimicked by burying sections of log upright in a pyramid formation. A good and varied dead wood resource is beneficial for a wide variety of invertebrates and so measures to achieve this should not be limited to sites known to support Stag Beetles.

3.112. It should be noted that populations of Honey Bees in hives are not a biodiversity benefit, as the large numbers of individuals involved will be in competition with the many species of solitary bees and other pollinating insects that are native to the area. They should particularly be avoided in any locations known to support rare or scarce pollen-feeding species, or any significant assemblages of invertebrates.

Hedgehog

3.113. There is little available information on the status of Hedgehog populations at a local level, although it is clear that there has been widespread decline, and local extinctions, across the UK. There are recent records in Greenwich, mostly to the south and east, matching the less intensively developed parts of the Borough, as would be expected. Establishing the presence of Hedgehogs across the Borough would be an important first step to identifying key areas and then working to conserve and enhance the habitat features that they require. The London Wildlife Trust has an ongoing project to map the distribution of Hedgehogs[11] and could be a useful partner.

Plants

3.114. Although some of the SINCs support assemblages of locally and regionally scarce plant species – particularly ferns, acid grassland species and aquatic species – there are few

[11] Help us find London's hedgehogs | London Wildlife Trust (wildlondon.org.uk)

nationally rare or scarce plant species that are recorded within SINC descriptions. The Nationally Scarce Clustered Clover is present in acid grassland on Greenwich Park (M069) and Charlton House (GrBI14).

3.115. No plants have been included as London Opportunity Species, but a Rare Plant Register for London (titled in draft as *Greater London and Middlesex Axiophytes*) is in preparation which it is hoped will clarify any species that should be a priority for conservation measures. Any sites supporting significant populations of locally, regionally or nationally rare species should be designated within the SINC network.

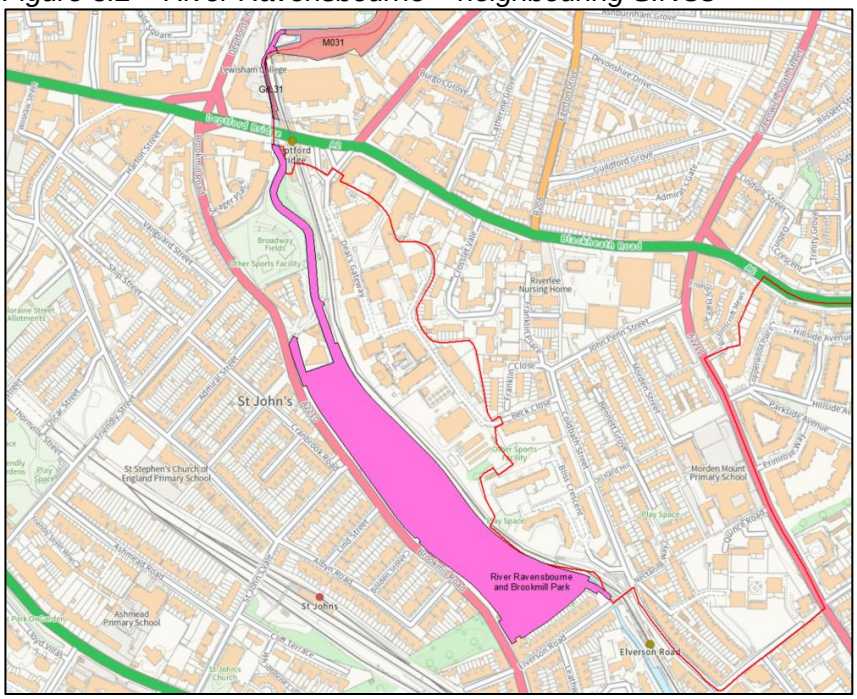
Neighbouring Areas

3.116. Figures 3.2 to 3.7 show the SINCs designated within neighbouring Boroughs that are adjacent or very close to their borders with Greenwich, with obvious ecological connection. Cross border Metropolitan SINCs and Greenwich SINCs are shown in dusky pink, and neighbouring Borough SINCs are shown in bright pink. The Borough boundary is a red line.

3.117. The most obvious links are those Metropolitan sites that cross Borough borders, including the River Thames and Tidal Tributaries (M031) (not illustrated), which stretches all the way across the city. Most of the Blackheath part of the Blackheath and Greenwich Park SINC (M069) is in Lewisham (Fig. 3.3) and the Lesnes Abbey Woods and Bostall Woods SINC (M015) is divided by the Borough border along Knee Hill (Fig. 3.5).

3.118. A very minor section of the River Ravensbourne lies in Greenwich (GrL31), connecting downstream to the River Thames and upstream to a more extensive SINC centred on the River in Lewisham (LeBII14) (Fig 3.2).

Figure 3.2 – River Ravensbourne – neighbouring SINCs



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3.119. At the southern end of Greenwich, the section of the Sidcup Road Grasslands and Harmony Wood SINC (GrBI10) to the south of Sidcup Road is continuous with the Mottingham Nature Reserve and River Quaggy SINC in Bromley (ByBII07) (fig 3.4).

Figure 3.3 – Blackheath – neighbouring SINCs

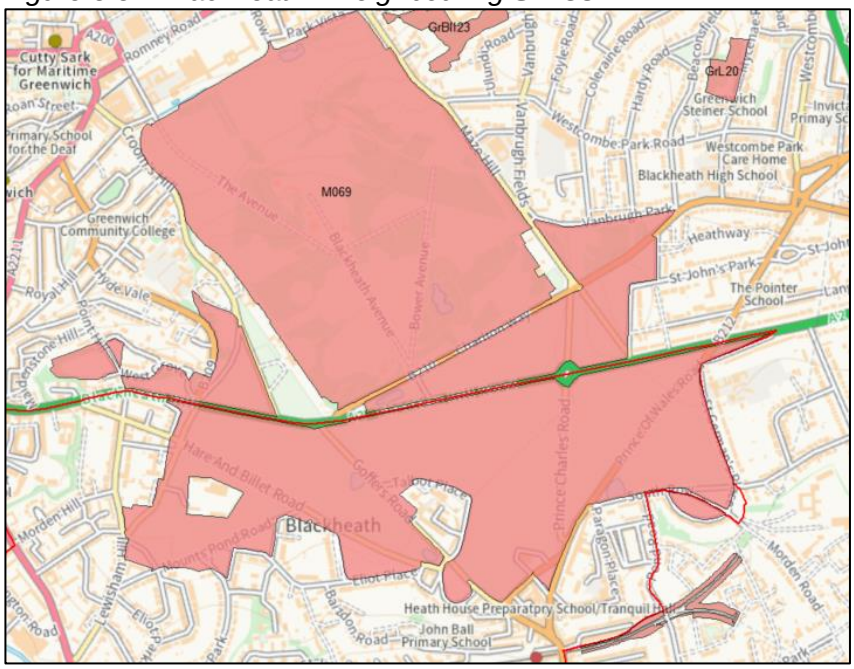

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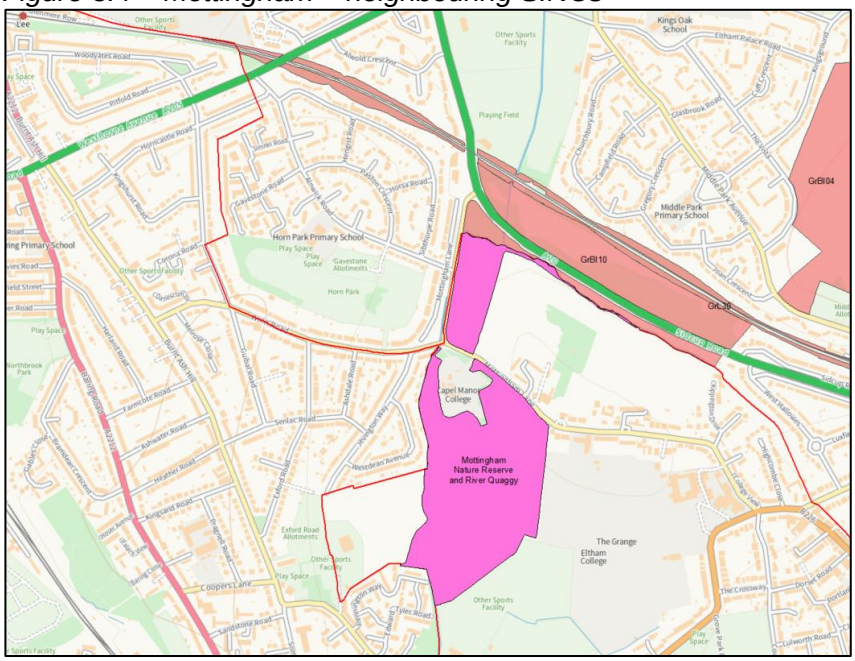
Figure 3.4 – Mottingham – neighbouring SINCs



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3.120. On the eastern edge of the Borough, the Mottingham and New Eltham Railsides (GrL30) extend into Bexley as the Sidcup Railsides (BxBII23) for a considerable distance (Fig 3.5). The eastern half of Woodlands Farm (part of GrBI06) is in Bexley where it makes up part of a wider SINC (BxBI12) (Fig3.6). A very small part of the Bexley East Wickham Open Space SINC (BxBII19) is in Greenwich (GrL22), but the SINC also borders the Woolwich Cemeteries & Rockliffe Gardens SINC (GrBI20) (Fig 3.6).

Figure 3.5 – New Eltham – neighbouring SINCs

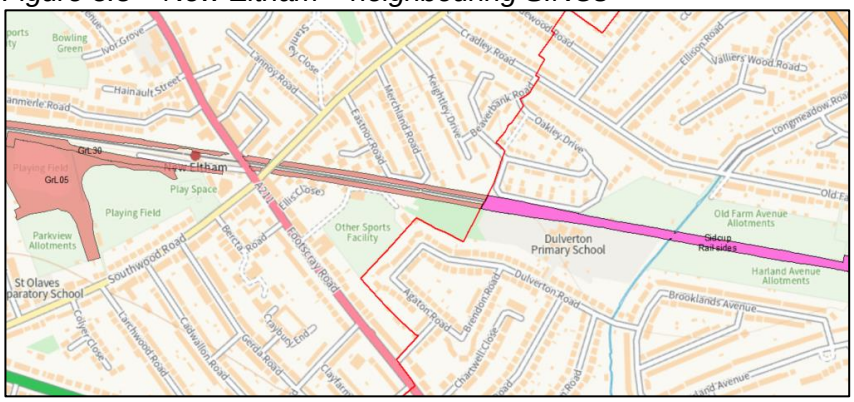

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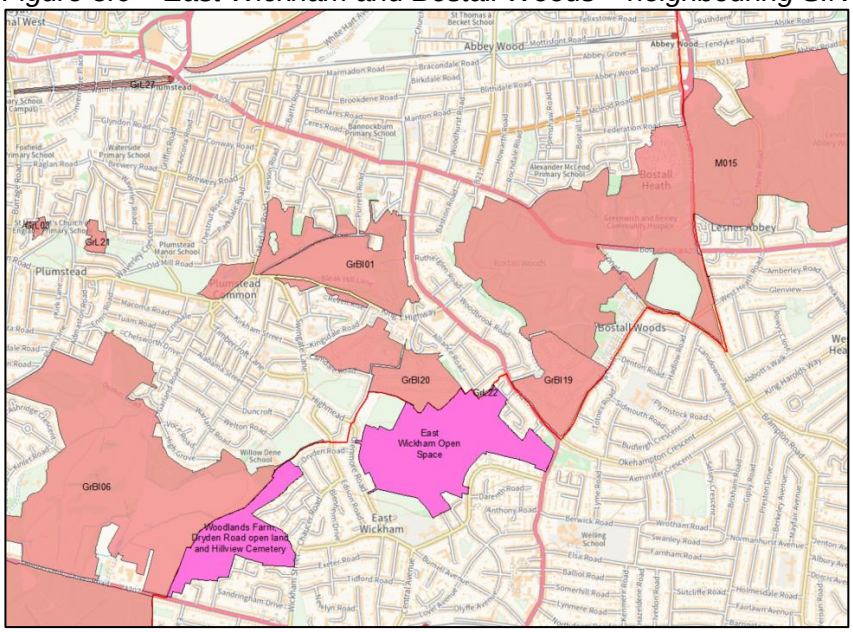
Figure 3.6 – East Wickham and Bostall Woods – neighbouring SINCs



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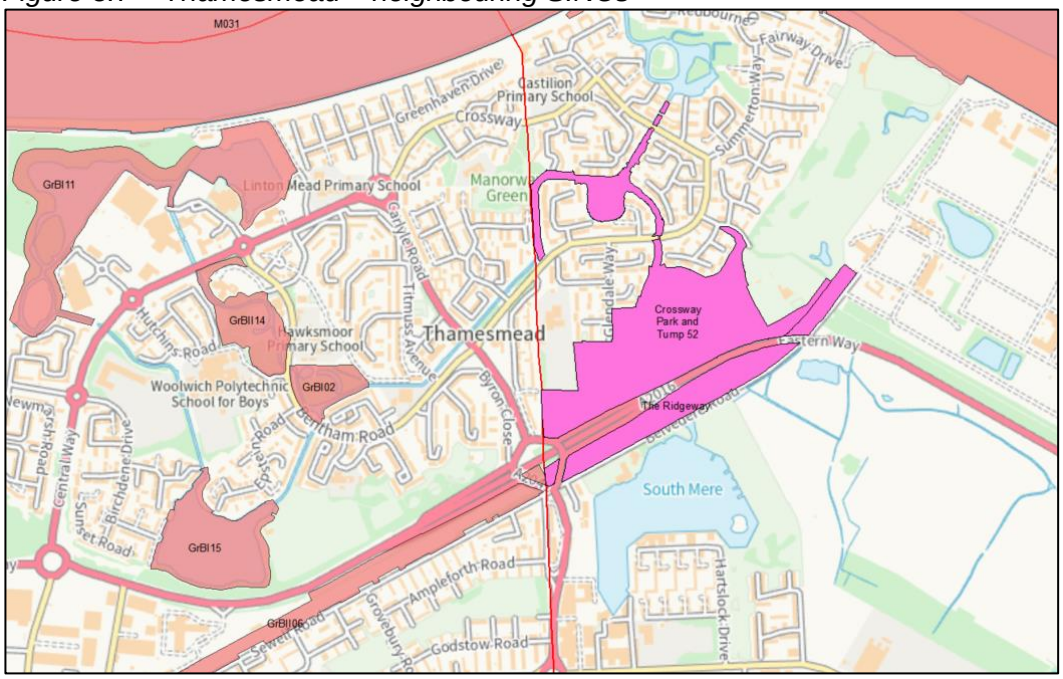
3.121. In the northeast corner of the Borough, The Ridgeway (GrBII06) extends into Bexley (BxL16), where the underlying sewage pipe reaches its destination at Crossness (Fig. 3.7). To the north of the Ridgeway is the Crossway Park and Tump 52 SINC (Bx07), which is connected by a canal to the very similar Greenwich Thamesmead SINCs (GrBI02, 11, 15 and GrBII14) (Fig 3.7).

3.122. Value can be added to Biodiversity resources where connections are recognised and considered within decision making and strategies. There is a clear advantage in seeking to widen the extent of connected semi-natural habitat beyond the Borough's boundaries.

Figure 3.7 – Thamesmead – neighbouring SINCs



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Biodiversity Priorities in Greenwich

3.123. The underlying priorities for maintaining and enhancing biodiversity within the Borough can be simply expressed, as follows, in order of significance:

1. Protect existing sites designated for nature conservation from negative impacts
2. Maintain and enhance the existing designated sites to achieve favourable condition
3. Improve the ecological connections between sites within and beyond the Borough
4. Maximise the biodiversity value of all open spaces

3.124. From a development management perspective, the first of these priorities involves the preparation and application of rigorous and defensible policies that prevent development from being promoted on designated sites. The other three are dependent on identifying land parcels upon which those ambitions can be realised, including through the development management process.

3.125. Taking the existing ecological network into account, and considering the opportunities created by the environmental conditions across the Borough, the habitats that it most important to focus on, as expressed in terms of the Priority Habitat descriptions set out in response to Section 41 of the NERC Act are proposed as follows:

- Lowland Dry Acid Grassland
- Lowland Meadows
- Lowland Mixed Deciduous Woodland

3.126. Priority Habitats that are considered to be less significant in the context of the Borough, with fewer significant opportunities for gain, but that still offer potential for the enhancement of biodiversity are as follows:

- Open Mosaic Habitat
- Rivers
- Lowland Fen
- Reedbeds
- Traditional Orchards

3.127. The majority of the species of conservation value that are present in the Borough will respond positively to the application of habitat measures with a focus on sites that have been designated, which encompasses the majority of Greenwich's semi-natural habitat.

3.128. However, there are species whose habitat preferences extend into areas that have been, or will be, subject to development pressure, be it from existing residential or industrial use, or redevelopment. In general, the incorporation of high-quality landscaping with a focus on native, locally appropriate species will have a positive impact on biodiversity as a whole.

3.129. The following species taken from those London Opportunity Species present in the Borough are those that it is suggested are most in need of support through the development management process, or by the actions of residents and local businesses. This covers the enhancement of biodiversity and the provision of opportunities for species

at a smaller and more local level throughout the Borough, which is around on-site measures within developments, by retrofitting, or by the management of gardens or other landscaping. An outline of appropriate measures is provided for each:

- Swift – inclusion of nest boxes in new buildings or fitted to existing buildings
- House Sparrow – inclusion of nest boxes in new buildings or fitted to existing buildings
- Black Redstart – provision of biodiverse roofs and open mosaic habitat, particularly close to the Thames
- pipistrelle bats – inclusion of nest boxes in new buildings or fitted to existing buildings
- Common Frog – retention and maintenance of existing ponds, and new pond creation
- Stag Beetle – retention of mature trees and standing dead wood where possible, and the provision of deadwood features (such as Stag Beetle pyramids) in suitable open spaces

3.130. Measures to enhance the populations of these species will have a positive impact on many other species at the same time.

4. Opportunity Areas

4.1. Processes used for identifying opportunities for habitat creation and enhancement typically involve mapping buffers around existing nature conservation sites and habitats, combined with heat-map type analysis of environmental criteria considered to indicate preferred locations, and available information on species distributions. In Greenwich, as with other predominantly urban Boroughs of London, the availability of undeveloped open space will be the most significant limitation on the extent and distribution of opportunities and so these approaches may be less useful.

4.2. The following sections seek to explore alternative means of developing meaningful, strategic opportunity areas within these constraints.

4.3. Metropolitan Open Land and Community Open Space are both designations that provide protection from most development in the Local Plan and as such, could also serve as a proxy for opportunity areas for maintaining and enhancing biodiversity.

4.4. The Metropolitan Open Land (MOL) designation is the equivalent of Green Belt for an urban setting and in Greenwich, it covers most of the larger SINCS together with extensive areas of other land uses including parks, recreation and sports grounds, allotments, and some public buildings and their grounds.

4.5. Community Open Spaces are generally smaller and break up the urban landscape, with a similar range of land uses to MOL, but they are not necessarily in public ownership. Some coincide with SINCs, but most do not, and although they may not currently support semi-natural habitats, there is likely to be potential for biodiversity enhancement

4.6. Biodiversity net gain cannot be delivered on SSSI sites, as there is already an obligation for them to be managed in an effective way that delivers favourable condition, although in Greenwich, this only applies to the Oxleas Woodlands.

4.7. Sites that are in Countryside Stewardship cannot be used to deliver biodiversity net gain, unless the enhancement in condition is clearly over and above what is required within the stewardship agreement. There are currently no extant stewardship agreements within the Borough, although this would be another means of funding the management of existing habitats to enhance their condition, particularly woodlands.

Habitat Enhancement

4.8. In Greenwich, the sites designated as SINCs are likely to provide the best opportunities for habitat enhancement in ecological terms, although their ownership and existing uses will provide constraints in some cases. High level observations on the condition of SINCs during their recent review suggest that only six would be considered to be in ‘good’ condition. Seven were considered to be in ‘poor’ condition and three in ‘moderate’ condition, but declining, suggesting clear opportunities for enhancement. It would be realistic to think that at least some of the 27 sites considered to be in ‘moderate’ condition could also be enhanced.

4.9. More detailed surveys and assessment would be needed to confirm the current condition of the habitats on the SINCs against the criteria set out in the Statutory Biodiversity Metric condition assessment methodology that underpins biodiversity net gain, and the specific measures that could result in habitat enhancement. Habitat Units are generated where there is an improvement in habitat condition category, or where the distinctiveness of the habitat is raised.

4.10. Habitat condition is assessed differently for different habitat types, with only a few pass or fail criteria applied to grasslands, but a more complex scoring system against 13 criteria for woodland. In general terms, higher condition scores are achieved for habitats that more closely resemble the typical habitat description associated with their classification, and have more structural diversity, a higher diversity of plant species, and an absence of negative indicators or non-native species.

4.11. The majority of those in poor or declining condition were grasslands. Typical actions to improve condition for grassland habitats include improving species diversity by better management, aiming to reduce the dominance of more competitive grasses, or by introducing additional species, by seeding, for example. Condition assessment criteria for species diversity, based upon the number of species per metre squared, are relatively challenging in many circumstances.

4.12. Cutting grasslands in spring and autumn and removing the cuttings leads to a gradual reduction in soil fertility and reduces the competitive advantage of coarser, faster growing grasses, which in turn provides more opportunities for other species to establish. This can mean changing the frequency, timing and method of cutting, for grasslands that are not in conservation management, or reducing the frequency of cutting for grasslands that have been managed for tidiness or public amenity. Preventing excessive scrub growth and creating a variety of sward heights is also necessary to achieve higher condition categories.

4.13. With woodland habitats, achieving a higher category of condition means passing criteria that involve management actions, but also some that relate to the maturity of the woodland. Higher scores are given where there is a higher diversity of native species across the canopy, where there is evidence of natural regeneration, where invasive species are absent, where there is temporary open space created by management, where there is good vertical structure in the canopy and understorey and where there is a good dead wood resource, all of which can be achieved by management actions. Other scoring criteria can't be influenced in the same way, including the presence of veteran trees, a varied age distribution in the tree stock and the presence of ancient woodland indicator species. The absence of browsing damage – not likely to be a problem in Greenwich – and good tree health are also important.

4.14. Improvements in habitat quality or condition could be realised by the Council on its own sites, or in partnership with other landowners. Biodiversity net gain is a possible way of funding such enhancements, for 30 years at least, where the habitat units that the enhancements generate can be matched to a development's off-site requirements. It should be noted that the Council cannot direct developers to undertake such offsets on Council land in preference to other local opportunities.

Habitat Creation

4.15. From an ecological perspective, the identification of sites for habitat creation involves two main strands: identifying locations that will buffer or extend existing designated sites; and identifying locations that are most suitable for the creation of new biodiverse habitat. In some cases, these two strands will overlap, where the best place to create some new habitat is adjacent to an existing designated site, or to put it the other way around, where the land needed to buffer an existing designated site has all the characteristics that allow for good quality habitat to be created.

4.16. A third strand in Greenwich is for the creation of new habitat is in relation to the Wildlife Deficiency Areas identified in the Local Plan, which represents an existing, evidence-based prioritisation of measures. The policy (OS(e)) is particularly aimed at accessibility.

4.17. The ecological features of a SINC, or other sites of nature conservation significance, could benefit from the presence of buffer land for the reasons set out below. These may be less realistic to apply in a constrained urban environment than in rural areas but they remain ecologically valid.

- Sensitivity; where the habitat present would be improved by protection from external factors
- Structural diversity; where the boundaries of the habitat present do not represent a semi-natural transition to the adjoining habitat and where such a transition would enhance the designated habitat, or
- Scale; where the quality and condition of the designated habitat would be functionally improved by an increase in the size of the habitat block

4.18. In reality, there may be limited opportunity within the Borough to create habitats that will compliment or extend existing nature conservation sites, as they very often have boundaries fixed by infrastructure or developed areas. Where there is additional open space, it tends to have another function that would prevent it being easily given over to habitat creation.

4.19. As a result, specific maps identifying opportunities for different habitat types are not considered to be appropriate, or helpful. Habitat creation should be welcomed in any part of the Borough and where an opportunity arises to deliver such a gain for biodiversity, then consideration should be given by a suitably qualified ecologist to the most appropriate habitat type, based upon proximity to existing habitats and the environmental conditions.

4.20. Grassland creation has more potential to provide higher quality and sustainable habitats on the sand and gravel soils. Even there, some action may be required to return the ground to a more mineral soil structure following decades of nutrient enrichment from the effects of urbanisation. Ponds would be more easily created on the London Clay, where there would be less need for lining. In all situations, habitat creation should be consciously focused on the detail of what should be done on the site in question to provide the conditions needed to support habitat in the best form it can take. Where the intend use is in tune with the environmental conditions, the result is likely to be cheaper and easier to deliver and require less ongoing maintenance.

4.21. Site preparation could mean stripping existing vegetation and topsoil in order to create the desired conditions required to promote structural and species diversity in the chosen habitat, removing any competitive, generalist species that would otherwise continue to dominate for many years. It could also mean landscaping works to recreate a more diverse topography, which will benefit the small-scale variation that promotes biodiversity, with warm banks and damp hollows.

4.22. In Statutory Biodiversity Metric terms, sites identified for habitat creation will already have some habitat unit value except in the case of an artificial surface or completely unvegetated substrate. The number of habitat units generated by habitat creation would be the net difference between that of the existing habitats and those to be created.

Biodiverse Roofs and Walls

4.23. From the original use of the term green roofs, the names used to describe natural features on the tops of buildings have varied depending on what is identified as the main purpose. A useful classification of these is provided below:

- Intensive green roof – landscaped and managed to provide formal garden or park habitat, or for food production, with little biodiversity potential
- Extensive green roof – biodiverse roofs designed to replicate natural habitats, with a low-nutrient substrate to create open mosaic and/or meadow habitat. Sedum roofs fall in this category, but their biodiversity potential is limited. Brown roofs are those biodiverse roofs replicating post-industrial habitats
- Blue-green roof – designed to manage and store water, but also with biodiverse features
- Biosolar roof – designed to provide a combination of renewable energy generation and biodiversity value

4.24. In the following sections, living roof is used to encompass all types of green roof and biodiverse roof is used to describe those specifically aimed at biodiversity.

4.25. Figure 4.2 illustrates the locations of living roofs in Greenwich, reproduced from livingroofs.org[12]. There are clear concentrations at locations along the Thames in Greenwich, on the Peninsula and in Woolwich, along the Ravensbourne to Deptford and associated with the Kidbrooke redevelopment.

4.26. Livingroofs.org provides data on the creation of living roofs for the whole of London, last updated in 2019. Living roofs are generally more frequent in the inner London Boroughs and particularly in the City of London itself. In 2019 Greenwich had 0.43m^2 of living roof per resident, the second highest value outside of the City of London, and set against a whole London figure of 0.17m[12]. The extent in Greenwich was just over 120,000m2 in 2017, of which 26% was intensive and 74% extensive, including 5% biosolar.

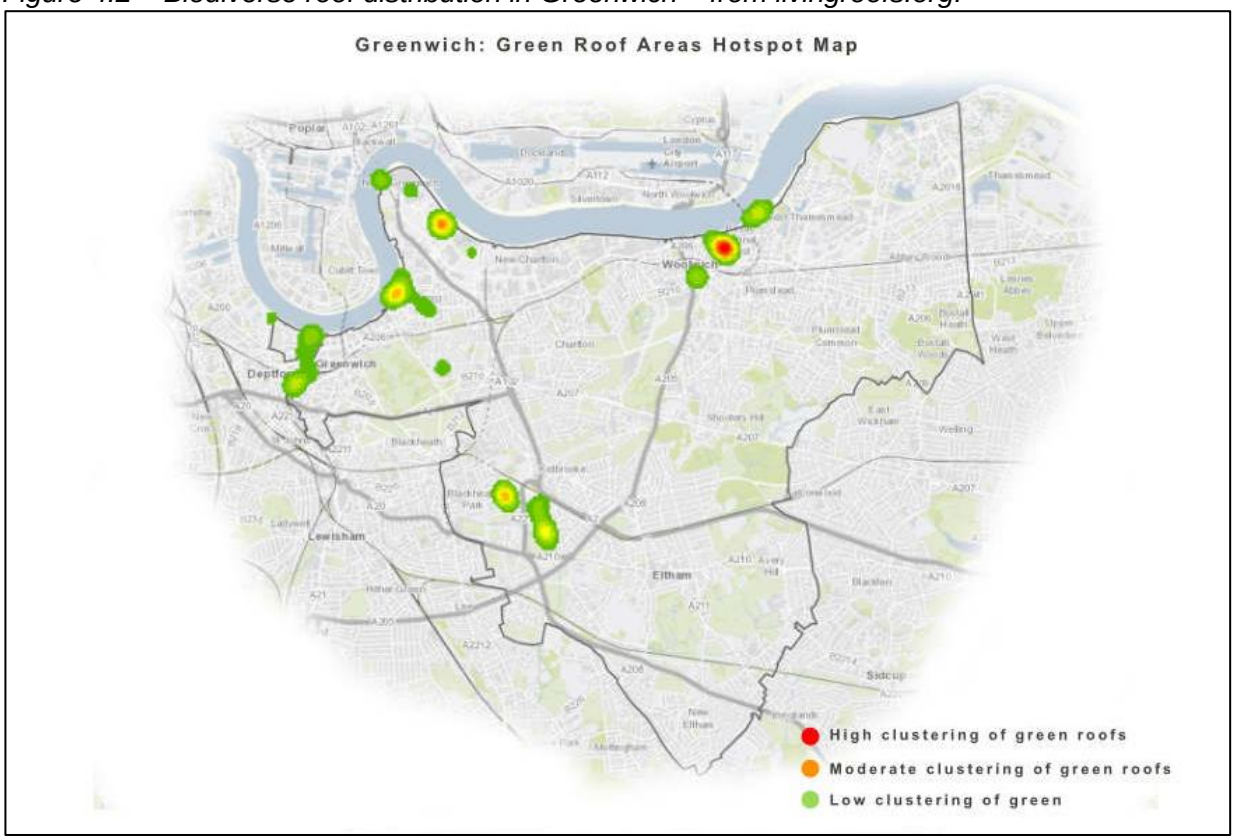
4.27. No comparable information is available about the distribution and extent of living walls, which encompasses ground level vegetation planted to grow up and cover the walls of a

[12] Livingroofs.org, the leading UK green roof website

building (a green façade), and specifically designed structures, either attached to the exterior of the building or integrated within its structure. Green walls are generally more aimed at overall environmental benefits, rather than specifically for biodiversity.

4.28. Within policy, the London Plan considers living roofs and walls as an important element of green infrastructure and urban greening, with no targeted policies aimed at encouraging their inclusion in development proposals. Living roofs can serve some purpose in any location from a biodiversity perspective, as their benefit is generally to more mobile species that can cross unsuitable habitat and have adaptations that assist their dispersal to new sites. However, there is a clear, cumulative benefit from provision that adds value to an existing roof or cluster of roofs, particularly where there is consistency in habitat objectives and design.

Figure 4.2 – Biodiverse roof distribution in Greenwich – from livingroofs.org.



Street Trees

4.29. There is clear policy direction at every level for the planting of more trees and increases in canopy cover, for a multitude of environmental benefits of which biodiversity is a relatively minor consideration. In the face of numerous pest and pathogen threats to native tree species, it is often non-native species that are preferred for planting in urban situations, which have far less value in biodiversity terms. There is well-established guidance for tree species selection in urban areas, and it is not the purpose of this study to challenge that. Beyond their value as food plants, trees also play a part in the provision of shelter and as structural support to the movement of mobile species, which can equally be provided by non-native species.

4.30. In addition to ambitions to increase the amount of tree cover in urban areas by planting more trees, the retention of existing trees is also of great importance. Any loss of trees through development will need to be compensated with an appropriate ratio of new to old to take account of the delay in reaching maturity.

4.31. Tree planting locations should be carefully planned to maximise the longevity of the benefits that they provide. Trees need sufficient space for their roots and canopy to reach maturity and realise their potential without creating management requirements and liabilities. Bespoke planting systems are available to provide the trees with the root space and access to water they need in urban areas where there is no open ground, but these can be costly.

4.32. Street trees, and any trees over 7cm diameter at breast height that do not contribute to another classified habitat that includes trees, are recognised within the Biodiversity Metric as Individual Trees. This does not apply to woodlands or orchards, for example, or any habitat that includes trees in its definition, but it does apply to trees in grassland or other open habitats, and to groups of trees in such circumstances.

4.33. The calculation methodology in the Metric is based upon converting the size of the tree into an area measurement. Standard area figures are applied to each of four size classes, based upon the diameter of the trunk at breast height:

- Small – more than 7cm and less than or equal to 30cm
- Medium – more than 30cm and less than or equal to 60cm
- Large – more than 60cm and less than or equal to 90cm
- Very Large – More than 90cm

4.34. Groups of Individual Trees are valued more highly by calculating the area based on each of the trees present, even where their canopies overlap. There is also a specific condition assessment for urban trees, based upon whether or not it is native, mature and provides habitat features for animals. Other criteria include whether or not its canopy is at least partly above other vegetation and whether or not it is damaged or in management that restricts its expected canopy size. It is thought likely that most urban street trees are only ever likely to achieve ‘Poor’ condition, with only the oldest, native species in parks capable of getting to ‘Good’.

4.35. The same calculation methodology applies to trees within a development site’s baseline as for trees that are part of post-intervention landscape design, or for individual street tree planting. For planted trees, the size should always be recorded as ‘Small’, as growth rates over the 30 years of the net gain project are unlikely to result in anything larger, unless very large trees are planted. This delay in reaching maturity means that trees, and woodland habitats, provide fewer Habitat Units than other habitats.

4.36. To illustrate the potential for using biodiversity net gain offsetting for the delivery of street trees, planting one tree in an urban location, using the ‘Small’ size class would generate 0.01 Habitat Units, which is likely to be the equivalent of about £200 to £250 if sold to a

developer as an offsite gain[13]. This is unlikely to cover the cost of planting and aftercare for the tree. While developers will get some net gain benefit from including street trees within their landscape designs, there are numerous drivers for them to do so already and biodiversity net gain is unlikely to become the most important.

4.37. Where trading rules require the planting of new street trees or there are other imperatives that apply, it will be important to ensure that any Habitat Unit cost paid by the developer reflects the establishment and management requirements likely over the 30-year period.

4.38. Biodiversity net gain will provide a favourable outcome where trees are affected by a development proposal. A developer looking to remove one urban street tree of 'Medium' size in 'Poor' condition would have to plant 16 'Small' trees to offset the loss of Habitat Units. Even 'Small' trees in 'Poor' condition would have to be replaced by two equivalent trees.

Connectivity

4.39. Four green corridors were previously identified within the Royal Greenwich Local Plan, all of which are SINCs:

- The railway line between Blackheath and Falconwood (GrL29)
- The Plumstead Railway cutting (GrL27)
- The Ridgeway in Abbey Wood/Thamesmead (GrBII06)
- The railway line between Lee and New Eltham (GrL30)

4.40. The quality of the habitat in these corridors is generally low, particularly along the railsides, and there is a lack of habitat diversity in each one. While the railsides might enable the movement of more mobile species associated with tree canopies, they will be less effective for species associated with open habitats, or those more sensitive to disturbance. The Ridgeway provides a more effective ecological corridor, but it is somewhat isolated from other semi-natural sites, within a largely industrial landscape.

4.41. In addition, the Local Plan recognises the Green Chain network of open spaces, which includes many SINCs around the southern edge of the Borough, with a spur north through to the Thames, by the barrier. The Green Chain is primarily aimed at public access and includes all kinds of open space, extending from Bexley in the east to Southwark in the west. Enhancing habitats for biodiversity throughout the Green Chain would result in very strong ecological connectivity through the less intensively developed parts of the Borough.

4.42. Connectivity measures are aimed at improving the robustness of species populations by increasing gene flow between nearby populations, allowing colonisation of new sites, and facilitating re-colonisation of sites where populations may be lost by adverse impacts. With climate change impacting on environmental conditions in a profound way, these connections also offer a chance for species to find somewhere better suited to their needs if necessary.

[13] Based on current estimates of Habitat Unit prices, although this is likely to vary regionally depending on demand and availability

4.43. Such connections also serve to improve the general ecological condition of the wider landscape, establishing a reservoir of biodiversity that can then permeate the whole landscape, including those areas of residential development to which they are connected.

4.44. As well as seeking their protection through planning policies, it would be desirable to strengthen and enhance connecting habitats to improve their contribution to the biodiversity network. Ideally this would involve broadening the connections and improving the condition of the habitats along them, as well as creating more links with nearby SINCs and other green infrastructure.

4.45. Opportunity for the creation and enhancement of these corridors may occur through the design of green infrastructure and mitigation habitats within development sites as well as through compensation measures and biodiversity net gain in the wider landscape. Any opportunity that arises should be assessed and designed to provide the maximum benefit to biodiversity, in line with the Borough's priorities.

Spatial Prioritisation

4.46. As applications for development on allocated sites come forward, proposers should be encouraged to explore the best opportunities for net gain in immediate proximity as a first option for achieving biodiversity net gain. Depending on the location that might be creating new green infrastructure, buffering an adjacent SINC, enhancing a nearby SINC or green space, planting street trees, or incorporating biodiverse roofs. Consideration should be given to where the best gains can be achieved in each case and what measures would provide the most added value to the existing biodiversity resource of the area around the site.

4.47. Up to date information on the condition of habitats on SINCs and other green spaces suitable for biodiversity enhancement will be important in guiding the prioritisation of biodiversity net gain measures. It may be preferable to favour sites that are currently in the poorest condition as a means of raising the standard of semi-natural habitats in the Borough.

4.48. This and other preferences for the prioritisation of biodiversity net gain delivery will need to be expressed within the local policy framework for them to effectively guide what developers do on their sites, although some degree of consensus may be achievable through the pre-application process. Newly published guidance encourages Local Planning Authorities to use local policy documents to set out the parameters for the balance between onsite and offsite measures and links to the forthcoming Local Nature Recovery Strategy and other strategic priorities.

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