

SUTTON BIODIVERSITY STRATEGY 2020-2025

(Part of the Sutton [Parks and Open Spaces Strategy 2020-2025](#))



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Introduction

More than 98% of visitors to Sutton's parks say that wildlife and plants add to their enjoyment of visits and over 90% would be happy for more land to be set aside for wildlife, including 65% agreeing that rural verges should be mowed less frequently to encourage wildlife, bees and flowers. When asked about herbicide use 68% say they would like all pesticide use stopped, a measure known to assist wildlife. Of course, David Attenborough's television programmes have raised awareness of the plight of the planet and climate change features regularly on the news, so it is no surprise that Sutton's residents want to do their bit for the environment.

Sutton's Biodiversity Strategy is a plan of action to ensure that plants, animals and ecosystems are conserved, protected and enhanced and that progress is tracked, using measurable targets.

The strategy is composed of four plans for high priority habitats and a plan for green infrastructure and Biodiversity Net Gain that set out in detail the actions the Council will take and can be found in the appendices B1 to B5 as follows:

- Chalk grassland (Appendix B1)
- Woodland and Scrub (Appendix B2)
- Rivers and Wetlands (Appendix B3)
- Parks and Green Spaces (Appendix B4)
- Green Infrastructure and Biodiversity Net Gain (Appendix B5)

The selection of priority habitats and species for action is based upon robust ecological principles and baseline information derived from national and regional guidance; such as habitats for which the UK has international obligations, habitats at risk and areas important for key species.

The strategy introduces a process called Biodiversity Net Gain, a process designed to ensure that every new development improves Sutton's environment for plants, animals and ecosystems, by either delivering those improvements on the development site, or by paying for improvements elsewhere within the borough. The process has been nationally mandated for all Local Planning Authorities, but Sutton is the first London Borough to adopt this way to evaluate biodiversity during the planning process.

Ahead of the national scheme roll out, Sutton has developed a 'biodiversity tariff', for when developments impact negatively on biodiversity but are unable to deliver Biodiversity Net Gain within the development site. This tariff value is currently set at c.£94,000 per 'biodiversity unit' per hectare.

As a leader in this work, Sutton is providing support and advice to Natural England and DEFRA on the roll out of the national scheme.

The strategy is a working document that can adapt to changes in the national scene, such as the recent publication of the (draft) Environment Bill (2019) and any exit from the EU. It shows how the Council intends to deliver locally on the Government's "A Green Future: our 25 year plan to improve the environment" (25YEP), how Sutton Council will encourage restoration of nature in all its forms, and documents how priorities may change through time to deliver environmental protection and gains.

What is biodiversity and why is it so important?

Biodiversity is the term used to describe all life on Earth, encompassing the diversity of organisms, the genetic variability within populations and the habitats, ecosystems and environments in which they live and interact.

A richly biodiverse environment is essential for supporting human life and there are now many documented examples of economic and environmental benefits to humans from working with nature. For example, biodiversity ensures soils are healthy and fertile so that harvests are reliable and sustainable and crops are pollinated. Healthy ecosystems provide natural flood defenses and pure drinking water and when functioning properly can provide food from agricultural produce, fish and other aquatic creatures, and provide for the decomposition of wastes. These are known as Ecosystem Services.

Globally, human activities such as unsustainable forms of agriculture, industry, recreation and international commerce are the main threats to biodiversity, exacerbating climate change and flooding and leading to the rapid loss and fragmentation of habitats, and elevated extinction rates of species and local populations.

Habitat fragmentation leads to local extinctions and reduced genetic diversity, making populations less resilient and further local extinctions more likely. Since the 1970's, species in the UK have dramatically reduced¹. People get used to not seeing or hearing birds, walking in a woodland, seeing butterflies in a flower rich meadow and otherwise being part of the natural world. Many people, perhaps unthinkingly, let biodiversity loss pass by unnoticed, but left unchecked, the planet will become unable to support human life.

Halting biodiversity loss has an economic benefit in preventing the loss of potential food sources, medicines and treatments, new industrial products and enhances tourism opportunities. A healthy natural environment contributes to climate change mitigation, flood relief, water purification and soil fertility. Biodiversity enriches our lives through physical, educational and social interaction and aesthetic appreciation.

If biodiversity is lost, human life is lost.

Sutton's biodiversity

For a borough on the edge of London, Sutton contains a surprising array of wildlife. Nationally declining or rare species such as the small blue butterfly, the flowering plant greater yellow rattle, invertebrates such as the stag beetles and birds such as the skylark, all live in Sutton. However, it is not just the rare or uncommon that we should protect. Common or familiar species such as blackbirds, robins and foxes, are all integral to UK biodiversity.

Sutton's natural character is influenced by its geology. In the southern half of the Borough, the underlying geology is chalk. Chalky soils are always alkaline and very free-draining, which restricts the type of plants that can grow on them.

In the north east, river terrace gravels predominate. These gravels are important in the building industry and their extraction has had a huge impact on the landscape. Current actions include the restoration of the 92 ha Viridor Landfill site, which covers a significant proportion of the river terrace gravels as a Site of Metropolitan Importance for Nature Conservation (SMI) by 2023, as part of a wider Wandle Valley Regional Park.

¹ [State of Nature 2019](#)

The north west of the Borough is dominated by London clay, a heavy, neutral soil that holds a lot of water and is again colonised by characteristic plants.

The chalk spring fed river Wandle, the Beverley Brook and Pyl Brook all support a rich diversity of invertebrate life and fish species. Chalk Rivers are national priority habitats, because of their characteristic plants and animals and threats to their vitality.

The maps in Appendix B6 show the geology of Sutton and Sites of Importance for Nature Conservation, as set out in the Council's Local Plan 2016-2031.

Strategic planning and development

Habitats and species listed as priorities in this strategy are a material consideration in the preparation of local development documents and the making of planning decisions.

Protected species (currently under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended)) are also material considerations within the planning process.

The Sutton Local Plan 2016 - 2031 contains Policy 26 on biodiversity, and broadly states:

- 1) the Council will undertake Biodiversity Net Gain and,
- 2) the Council will support the creation of '*Various habitat enhancements identified through the Council's Biodiversity Action Plan [this Strategy] and the Catchment Plans for the River Wandle and Beverley Brook*' (clause b).

The actions identified through this Biodiversity Strategy aim to fulfil the Council's aspirations through the Local Plan to deliver Biodiversity Net Gain on development sites and deliver wider environmental benefit (i.e. river restoration). Appendix B5 on Green Infrastructure and Biodiversity Net Gain provides more detail.

Biodiversity Strategy Policies

To ensure that Sutton cares for its plants, animals and ecosystems and delivers on existing commitments to improve land for biodiversity and continues to provide education about biodiversity, the six policies below have been adopted. These policies aim to ensure that the Council:

- Restores the natural functioning and habitats of the River Wandle, Pyl Brook and Beverley and associated wetland habitats
- Maintains, enhances and creates new wildflower meadows and grasslands
- Maintains, enhances and creates new woodland and scrub areas
- Undertakes specific actions to enhance populations of Priority Species of plant and animal
- Continues to offer education through the Ecology Centre, guided walks and talks and volunteering opportunities through the Conservation Volunteer programme.

Policy Bd1

The Council, through this Biodiversity Strategy, will fulfil all agri-environmental scheme targets.

Policy Bd2

The Council will deliver Planning Policy 26 on Biodiversity to maintain, protect and hold up-to-date information for designated sites.

Policy Bd3

The Council will deliver Biodiversity Net Gain and seek defined compensation costs towards aspirational habitat restoration, as set out in Appendix B5.

Policy Bd4

The Council will engage and enthuse people of all ages in valuing wildlife and nature, through education and active participation.

Policy Bd5

The Council will protect, maintain and enhance habitat important for biodiversity by delivering the plans for high priority habitats and species, as set out in Appendices B1, B2, B3 and B4.

Policy Bd6

The Council will proactively work with the GLA to fulfil regional targets (see **Table 1**) and national organisations (such as Natural England and DEFRA) in the delivery of landscape scale work, such as the Nature Recovery Network and mandated Biodiversity Net Gain (BNG)

Table 1 - London Environment Strategy Targets

Habitat	By 2025	By 2050
Species-rich woodland (new)	20 ha	200 ha
Flower-rich grassland (new)	50 ha	250 ha
River and stream (restored)	10 km	40 km
Reedbeds (new)	5 ha	30 ha

This Biodiversity Strategy seeks to ensure the ecosystem functions well in Sutton. For instance, using grazing animals to maintain and enhance special chalk grassland habitats for wildflowers, grasses and associated fauna is vital, as part of the UK's commitment to fulfilling our international duty for this rare habitat. Light (extensive) grazing, as undertaken in Sutton, increases the soils capacity to store carbon dioxide, compared to mowing². Once animals are on site, the grass is removed and converted into animal protein. The size of the animals, particularly with cattle, creates localised bare areas, vital for seed dispersal and seed set. Their dung provides ready made compost for wildflowers and fungi, as well as food resources for numerous invertebrates, that in turn are food for birds and bats and larger insects. They break it down and recycle it into the soil, promoting soil health and productivity.

Grazing, therefore, delivers a wide variety of ecosystem services, compared to the mowing of meadows, including reduced annual costs.

Grazing would, ideally, be used on all wildflower meadows but there are areas of the borough where grazing can't be used, due to issues around livestock safety and public perception. Initial setup costs (fencing, water troughs and water supply, etc.) can also be prohibitive. Biodiversity Net Gain will seek to address some of the costs associated with more and better habitat creation and management.

² [Mowing and grazing](#)

Setting and monitoring targets for the Biodiversity Strategy

To ensure it is delivered successfully, the Biodiversity Strategy has measurable targets with clear timescales and there will be regular reviews of progress. The Council remains committed to deliver the work programme funded through the Higher Level Stewardship, which also has a clear set of deliverable targets to be achieved by 2023. The Parks and Open Spaces Strategy Action Plan shows the actions to be taken under Objective 8 to deliver the Biodiversity Strategy. In addition, the appendices to the Biodiversity Strategy (B1 to B5) provide more detail on the work to be delivered. Where aspects of the Biodiversity Strategy rely on additional funding, this may or may not be made available through Biodiversity Net Gain and other external sources. The Council acknowledges that delivery of these more aspirational elements cannot be guaranteed, but that opportunities should be taken to bid for funding as and when it is available.

Note:

This Biodiversity Strategy updates and replaces the old Biodiversity Action Plans (2005-2010 & 2010-2015). The Council has chosen to deliver these aims through this strategy, rather than a new Biodiversity Action Plan (BAP), due to the lack of regional and national Biodiversity Action Plans.

The previous Biodiversity Action Plans had a separate Species Action Plan (SAP) for bats, but this has been removed from this strategy, not due to a change in importance or significant improvements in bat populations, but because maintaining and creating high quality habitats is more important for all species, including bats, than the previous targets.

The Habitat Action Plan (HAP) for gardens has also been removed, although issues around the loss of gardens have not abated but gardens and their possible loss through development is now covered under Green Infrastructure and Biodiversity Net Gain.

Appendix B1: Chalk Grasslands

Habitat Action Plan 2019 – 2024



Sussex cattle at Roundshaw Downs LNR, set against the backdrop of Croydon (© D. Warburton)

1. Aims

- To maintain the 2018 baseline for chalk grassland with SINCP protection
- To enhance the condition of the chalk grassland entered into Higher Level Stewardship
- To create 2ha of new chalk grassland
- To increase public appreciation of the flora and fauna of chalk grasslands

2. Introduction

High quality chalk grasslands are important because they are amongst the UK's most diverse habitats often with 40 to 50 different species of plant within a few square metres. In contrast, the same sized area of amenity grassland may only hold 4-5 species. This is because chalk grasslands are often low in nutrients, have a high pH of 6.5-8.5, low water content and are often on steep, south facing slopes. They do not suit the usual grass species that dominate amenity grasslands, instead allowing more delicate and specialist species to thrive. In turn, these specialist species support invertebrate creatures adapted to exploit the plants and physical conditions of chalk grasslands.

Chalk grasslands are likely to have existed since the retreat of the last glaciation c.12,000 years before present (BP). Large expanses were probably rare but patches of grassland would have been maintained by the action of large herbivores or been retained where natural succession to scrub or forest was prevented by factors such as high salt levels on the coast, high wind speeds etc..

Around 6000 years ago, during the Neolithic period, the population of the UK started to farm the land, felling primordial 'wildwood' for fuel and building material, with the land turned over to grazing of domesticated animals, rather than being left to return to woodland. In those areas with chalk outcrops (North and South Downs, Chilterns, Yorkshire Wolds etc.), the soils are thin and water quickly percolates through the porous chalk, reducing its ability to be utilised for arable farming. The physical nature of most chalk grassland i.e. raised ground, often with steep slopes, means ploughing is often impossible, even today. The lack of soil nutrients means it doesn't produce enough grass for high intensity dairy farming either and instead it was used for low intensity grazing and became 'chalk downlands' essentially mimicking the natural grazing of wild herbivores, allowing specialist, delicate, species to expand in distribution as more land was converted to grasslands.

Over several millennia, these chalk downland species were enabled to carry on building their distinctive communities of plants and animals, leading to a highly complex and diverse landscape.

Changes to low intensity grazing, in the last 70 years or so, has resulted in a rapid decline in the total area of chalk grassland and its distribution has become more fragmented.

Where high quality chalk grasslands have been retained or restored through targeted conservation, we can see an echo of the wonders that these special places provide, from singing skylarks to teeming butterflies, the chirrups of grasshoppers and bush-crickets to the myriad of pinks, purples and yellows provided by the suite of delicate flowers. Summer on a chalk downland is a truly magical experience (**Figure 1**).

Figure 1 - Cuddington Meadows LNR (© D. Warburton)



3. Current Status

3.1 Area & Distribution

Sutton supports approximately 42ha³ of chalk grassland, although there is significantly more grassland on chalk, such as golf courses, that is likely degraded, at around 196ha in total. In London, chalk grassland is restricted to the southern edge, across the boroughs of Sutton, Croydon and Bromley on the North Downs, and to the extreme northwest, in the Borough of Hillingdon, where outliers of the Chiltern Hills just reach the capital. Around 390ha³ are classified as chalk grassland in London, with about 9% of that in Sutton.

The Sutton baseline of *actual* chalk grasslands is taken to be the GiGL data of 42.41ha, *managed* 'chalk grassland' through the Higher Level Stewardship Agreement as 45.96ha and *grassland on chalk* having protection through the Local Plan, including golf courses, as c.196ha.

Within Sutton, the underlying geology to the southern half of the borough is Upper Chalk / Clay with Flints. The vast majority of what would have been chalk downland in Sutton has been heavily modified, either through development or conversion to golf courses. There is an argument that the golf courses have provided some protection from more intensive development for chalk grassland species and features, particularly in the rougher areas. The Borough's substantial golf courses include Woodcote Park Golf Course (55 ha), Oaks

³ GiGL, 2006

Park and Golf Course (96 ha) and Cuddington Golf Course and Cuddington Hospital (62 ha) and may still have some remnant chalk grassland flora. In particular, c.4ha of Oaks Park is treated as meadow, undergoing an annual cut and haymaking, whilst 1ha of the old Cuddington Hospital (within the wider Cuddington Golf Course and Cuddington Hospital SINC) is managed as chalk grassland, through a combination of haymaking and grazing.

The largest extent of 'chalk grassland' under the direct influence of the Council managed for biodiversity is Roundshaw Downs Local Nature Reserve. At 38 ha, around 28ha is 'chalk grassland' (a mosaic of chalk and species rich neutral grasslands) and is managed through annual haymaking (c.20ha) and grazing by cattle (8ha). Close to Oaks Park is Carshalton Road Pastures, around 6.6ha of chalk grassland, scrub and woodland edge, where the 'chalk grassland' (c.4.5ha) is managed through annual haymaking by the Biodiversity Team.

The remaining sites in Sutton that are managed for nature conservation are small and highly fragmented. The Warren (0.53ha) is part of the wider Warren Park, Devonshire Avenue Nature Area (0.3ha) is adjacent to a school and the Queen Mary's Woodland, Wellfield Plantation and Grasslands SINC contains four small (0.5ha, 0.38ha, 0.22ha & 0.12ha, respectively) chalk grassland areas. Apart from those areas at Wellfield Grasslands that exclude public access, all sites containing chalk grassland within Sutton are open access and have considerable pressures from informal recreation and amenity use.

Sutton's chalk grasslands support a number of rare, scarce or restricted species, including the nationally rare and legally protected greater yellow rattle, in addition to other species scarce around London, such as knapweed broomrape and common centaury. Orchids, including man orchid, bee orchid and pyramidal orchid have occasionally appeared but at very low rates. It is unclear why Sutton grasslands are generally bereft of orchid species. Characteristic indicator species, such as kidney-vetch, marjoram, lady's bedstraw, quaking grass, cowslips and greater knapweed are all fairly frequently encountered on Sutton sites.

Key animals include the nationally scarce small blue butterfly (NERC 2006 Section 41 Priority Species) and birds such as the skylark ('Red List' species of 'Birds of Conservation Concern' and NERC 2006 Section 41 Priority Species).

3.2 Trends

Chalk grassland (in line with other lowland grasslands and meadows) has suffered dramatic declines nationally over the last 70 years. This is a product of a combination of factors such as:

- 'agricultural improvement' by the addition of hydrocarbon fertilisers and re-seeding with high yield fodder grasses (rye grasses etc.) for intensive pasturing for sheep and dairy or beef farming
- conversion to arable land through nutrient enrichment
- conversion to housing as agricultural land lost its value relative to the need for housing a growing post-war population
- conversion to amenity spaces (golf courses, parks etc.)
- declines in widespread pasturing across the landscape as grazing became the province of fewer and fewer people as more and more people moved to cities
- myxomatosis in the mid-1950s heavily impacted on supplementary 'natural' grazing by rabbits and led to 'scrubbing up', as tree and shrub shoots and saplings were not eaten, leading to conversion of grassland to scrub and eventually light woodland

- lack of appropriate management, either through insufficient resources or lack of technical expertise for landholders.

Successful chalk grassland management for conservation is still an emerging 'art', due to the vagaries of individual sites and species and their responses to intervention, but broad themes are generally applicable:

- create structural diversity - often through extensive grazing by hardy native breed livestock
- increase species diversity - either through 'green haying' or seeding from local provenance species-rich grasslands to increase niche availability
- reduce nutrient levels - mainly through mowing and grazing to reduce grass growth but atmospheric enrichment is almost impossible to reduce
- appropriate retention and management of scrub - scrub increases structural diversity and niche availability but can't be allowed to dominate the grassland

Because most of Sutton's sites are small, scrub on them is usually confined to hedges and boundaries, rather than scattered across open grassland. However, some thorny saplings are allowed to persist, as these provide small tussocks of grass where the thorny nature of the shrub resists grazing by sheep. These protected tussocks are then home to overwintering beetles and insect cocoons / pupae etc.

It is assumed, that insufficient management, particularly grazing, have been exerted on Sutton's 'chalk grasslands' over many decades, leading to a decline in this priority habitat. The aim of this Habitat Action Plan is to modify the MG1 grasslands back towards a CG3 community.

An increase in conservation grazing is a particularly important aspect in trying to achieve this goal.

4. Specific Factors Affecting the Habitat Action Plan

4.1 Major factors

- Cessation / lack of extensive grazing by cattle and sheep, leading to change in grassland community or 'scrubbing up'
- Delivery of Biodiversity Net Gain
- Fragmentation and isolation of sites
- Over-mowing in amenity areas, preventing growth and flowering of indicator species
- Under-mowing of other areas, leading to changes in the grassland community or 'scrubbing up'
- Pressure for development / amenity space
- Increasing management costs

4.2 Supplementary factors

- Reduction in landscape scale genetics through habitat fragmentation
- Atmospheric pollution and nutrient enrichment
- Climatic changes
- Recreational pressures from people trampling areas (creating muddy paths and squashed vegetation), disturbance of species (in particular, ground nesting birds) and nutrient enrichment from dog faeces.

- Application of fertilisers / re-seeding
- Tree planting
- Inappropriate pesticide use
- Illegal incursion / activities i.e. Travellers, quad bikes / motocross, flytipping etc.
- Invasive non-native species, especially *Buddleja davidii* and Canadian goldenrod.

It is clear that many of the major and supplementary factors affecting chalk grasslands do not occur in isolation; fragmentation and isolation of sites, pressure for development and reduction in landscape scale genetics are all intimately linked, for instance.

5. Current Action

5.1 Legal Status

Chalk grasslands are of international importance for their biodiversity. Chalk grasslands are considered a priority habitat under the NERC Act S41 (see Introduction, 3.2). Numerous species strongly or solely associated with lowland calcareous grasslands are also Section 41 Priority Species and some even have legal protection through the Wildlife and Countryside Act (WCA) (1981, as amended) and the The Conservation of Habitats and Species Regulations 2010 (as amended).

Around 46ha of 'chalk grassland' are under Council ownership. All are managed primarily for nature conservation.

Three chalk grassland sites have been declared as Local Nature Reserves (Roundshaw Downs, Cuddington Meadows and Devonshire Avenue Nature Area) whilst a further site on chalk but not displaying chalky tendencies is also declared (Belmont Pastures). Local Nature Reserve is a statutory designation for protection of sites.

All chalk grassland sites or parcels of land owned and managed by the London Borough of Sutton have non-statutory protection through the planning system. This takes a tiered approach based on assessment of each site and relation to other sites at a local (borough) and regional (metropolitan) level, as outlined within the SINC Selection Advice Note 2013⁴.

The highest tier of non-statutory protection is a Site of Metropolitan Importance (SMI). Sutton has two chalk grassland SMIs: Roundshaw Downs and Woodcote Park Golf Course. SMIs are those sites '*which contain the best examples of London's chalk habitats, sites which contain rare species, rare assemblages of species, important populations of species, or which are of particular importance within large areas of otherwise heavily built up London.*'¹¹ Woodcote Park Golf Course has not been surveyed since 2006; it is therefore not clear whether the SMI designation for this site is still warranted.

The next tier of protection is that of sites of value at the Borough scale. These are Sites of Borough Importance, which are subdivided, based on quality, into Grade I or Grade II. Borough Grade I sites in Sutton include Carshalton Road Pastures, The Oaks Park and Golf Course, Cuddington Golf Course and Cuddington Hospital (Cuddington Meadows)

The remaining sites are classified as Borough Grade II and are, again, protected under the Local Plan.

⁴ [SINC Selection Advice Note 2013](#)

Within Sutton, two chalk grassland specialists are legally protected under the Wildlife and Countryside Act: greater yellow-rattle and the small blue butterfly. Greater yellow-rattle is a nationally rare (Red Data Book) plant given legal protection against picking, uprooting, destruction and sale (Schedule 8 species of the WCA 1981). Its national stronghold is the chalk downlands of Sutton and Croydon.

The small blue butterfly is protected from trade actions (selling, offering for sale, etc.) under Schedule 5, Section 9 (5).

5.2 Mechanisms affecting the Habitat Action Plan

5.2.1 Historical Management

The London Borough of Sutton, in partnership with organisations such as the Downlands Partnership (DP) and Sutton Nature Conservation Volunteers (SNCV), currently manages ten of Sutton's chalk grassland sites. As noted previously, most management work centres on haymaking and scrub control undertaken by staff and volunteers, with low intensity grazing implemented where it can be. Hardy native breed sheep, provided through a Service Level Agreement (SLA) with the Downlands Partnership, enables Sutton to graze Wellfield North, South, East and West and the wood pasture within Queen Mary's Woodland, whilst around 1/3rd of Roundshaw Downs and all of Cuddington Meadows is grazed by Sussex cattle bullocks.

Over the last two iterations of Sutton's chalk grassland HAP, works have concentrated on removal of substantial areas of scrub and implementing grazing on Roundshaw Downs. We are now at a stage where we need to move from restoration of grassland *per se* to restoration of a *chalk* grassland community (i.e aiming towards CG3 communities).

5.2.2 Higher Level Stewardship

In December 2013, the London Borough of Sutton agreed a 10 year agri-environment scheme (Higher Level Stewardship - HLS) with Natural England. The bulk of the agreement relates to 10 'chalk grassland' land parcels, where the target for each parcel is to improve the quality of the grassland such that a specified number of 'indicator species' are present at specified abundances (see 7.1.2 below). Some sites also have targets in relation to kidney vetch, the sole larval host plant for the caterpillars of the small blue butterfly. The targets set by HLS are therefore of utmost importance for the London Borough of Sutton and strongly influence the aims and objectives of this HAP.

During summer 2014, each chalk grassland parcel was subject to a full suite of botanical surveys, specifically, a NVC survey to determine baseline plant communities, against which management successes can be judged most accurately. The NVC is also complemented by Chalk Grassland Rapid Assessment surveys, which have been undertaken annually since 2007 on some sites and the introduction of Natural England's G04 rapid assessment surveys. These latter two surveys will continue to be undertaken annually, whereas NVC surveys are undertaken every four years, as they are more resource heavy, except on the paddocks of Roundshaw Downs, where these are undertaken every other year.

5.2.3 Environment Strategy

The previous One Planet Sutton (OPS) targets are now superseded by Sutton's Environment Strategy, with the previous OPS targets being transposed to this HAP (7.1.1 below).

5.2.4 Resource Availability

The delivery of this Biodiversity Strategy Action Plan requires a suitably qualified and experienced team to direct and implement, in partnership with other organisations. Fortunately, external funding, such as the HLS scheme, is able to provide financial support.

Although the HLS scheme runs until 2023 and the Government has promised to maintain all agri-environmental payments post-exit of the EU, there is no guarantee that HLS or a new scheme will provide the necessary monies to continue to manage these sites.

One of the aspirations of this Biodiversity Strategy is to utilise compensation monies delivered through Biodiversity Accounting to deliver the creation and enhancement of chalk grasslands within Sutton but this is at an early stage and requires further resource input.

6. Priority Species

These species are indicators of higher quality environments and, often, are highly distinctive and recognisable, for even the untrained.

Common Name	Latin	Brief Description
Skylark	<i>Alauda arvensis</i>	A species in rapid decline nationally. It is generally found in open grassland habitats with little public disturbance.
Small blue butterfly	<i>Cupido minimus</i>	Kidney vetch, a plant restricted to bare chalk, is the only larval host plant of this nationally scarce and declining butterfly
Eyebrights	<i>Euphrasia</i> species	Delicate and beautiful hemiparasites of short and warm downland
Marbled white	<i>Melanargia galathea</i>	An easily identified and attractive butterfly, often seen in large numbers in high summer.
Marjoram	<i>Origanum vulgare</i>	An aromatic late flowering herb, marjoram is a fantastic nectar resource for butterflies, moths and bees.
Common blue butterfly	<i>Polyommatus icarus</i>	The larval host plant, common bird's-foot trefoil, thrives on good quality chalk downlands

7. Objectives and Actions

This action plan aims:

- To maintain the 2018 baseline for chalk grassland with SINC protection (Local Plan 2016-2031)
- To enhance the condition of the chalk grassland entered into the Higher Level Stewardship agreement
- To create 2ha of new chalk grassland
- To increase public appreciation of the flora and fauna of chalk grasslands

7.1 Habitat Targets

7.1.1 Long Term Target

- Enhance the quality of 45.96ha chalk grassland habitat and create an additional 12 ha by 2050. (Baseline is 45.96⁵ ha existing 'chalk' grassland habitats in 2014)

7.1.2 HLS Targets

HK7 Species rich grassland restoration to be undertaken at: Avenue Primary School nature area, Carshalton Road Pastures, Cuddington Meadows, Oaks Park meadow, Roundshaw Downs, The Warren, Wellfield 'C3', Wellfield East, Wellfield North, Wellfield South and Wellfield West. Total size: 45.96ha

- Year 5: have 2 indicator species with frequent & 2 indicator species occasional abundance at each site (as judged through G04 surveys)
- Year 5: have kidney vetch frequent at Cuddington Meadows, Roundshaw Downs, Wellfield East & West (as judged through G04 surveys)
- Year 10: have 4 indicator species with frequent abundance at each parcel (as judged through G04 surveys)

7.2 Habitat Action Plan Targets:

7.2.1 Targets:

CG1 To maintain the current extent of 'chalk grassland' in Sutton covered under the Local Plan. Baseline c.196ha, including golf courses.

CG2 To enhance the quality of calcareous grassland areas through participation within the Higher Level Stewardship scheme.

CG3 To create 2ha of chalk grassland

CG4 To promote the importance of chalk grasslands for biodiversity in the Borough

7.2.1 Actions

Code	Action	Lead
CG1	To maintain the current extent of 'chalk grassland' in Sutton covered under the Local Plan. Baseline c.196ha, including golf courses.	
CG 1.1	To implement Local Plan Policy 26 on protecting and enhancing sites, through the delivery of the Biodiversity Strategy and assessment of planning applications that may impact on designated sites.	Senior Biodiversity Officer
CG 1.2	To survey sites not managed by the Biodiversity Team, to appraise their suitability for retention within the SINC designations for the next LP review Target: 3 sites by 2025⁶.	Senior Biodiversity Officer

⁵ The GiGL data from 2006 states 42.41ha due to the survey protocol undertaken at that time. This HAP utilises the sites under HLS to restore to chalk grassland per se.

⁶ Cuddington Golf Course; Oaks Park Golf Course; Woodcote Golf Course

CG2	To enhance the quality of calcareous grassland areas through participation within the Higher Level Stewardship scheme. Target: 45.96ha fulfilling HLS targets	
CG 2.1	Manage and enhance those sites within the HLS scheme under designation HK7 to achieve HLS targets. Target: 10 ⁷ sites with up-to-date management plans reflecting HLS targets and prescriptions and 4no. indicator species frequent across each site by 2023.	Senior Biodiversity Officer
CG 2.2	Undertake Chalk Grassland Rapid Assessment and G04 indicator species assessment surveys on chalk grassland sites under HLS. Record all data on Recorder database and share with GIGL. Goal: 10 sites per annum until 2023 (as per CG 2.1)	Senior Biodiversity Officer
CG 2.3	Undertake NVC botanical assessment surveys on all sites under HLS HK7 designation under the specification within each site's management plan. Target: Roundshaw grazing paddocks to be surveyed biennially from 2016 to 2023. All other sites to be surveyed at least 3 times before 2023, as per their management plans (sites as CG 2.1).	Senior Biodiversity Officer
CG 2.4	Create conditions suitable for small blue butterfly in accord with HLS targets for Cuddington Meadows, Roundshaw Downs and Wellfield East, South and West. Increase the number of, or, create new scrapes specifically for kidney vetch at Cuddington Meadows, Roundshaw Downs, Carshalton Road Pastures and the Wellfield Complex. Target: Kidney vetch frequent at Cuddington Meadows, Roundshaw Downs and Wellfield East, South and West by 2023. Target: At least 1 scrape to be added to each of the sites noted above by 2020	Senior Biodiversity Officer
CG 2.5	Increase kidney vetch in Oaks Park meadow through scrape creation Target: 5 scrapes in Oaks Park meadow by 2024	Senior Biodiversity Officer / Friends of Oaks Park
CG3	To create 2ha of new chalk grassland	
CG 3.1	Identify possible areas within the borough for chalk grassland creation Target: 2ha mapped by 2021	Senior Biodiversity Officer
CG 3.2	Cost out habitat creation	Senior

⁷ Avenue Primary School; Carshalton Road Pastures; Cuddington Meadows; Oaks Park meadow; Roundshaw Downs; The Warren; Wellfield East, West, South & North

	Target: 2ha costed by 2022	Biodiversity Officer
CG4	To promote the importance of chalk grasslands for biodiversity in the Borough	
CG 4.1	Engage volunteers and members of the public in chalk grassland flora and fauna through survey events, guided walks, training days etc. Target: 10 site surveys per annum until 2023 and 10 walks / training days for the public by 2024.	Senior Biodiversity Officer

Appendix B2: Woodland and Scrub

Habitat Action Plan 2019 – 2024



Native bluebell at Ruffett & Bigwood LNR (© D. Warburton)

“It is not so much for its beauty that the forest makes a claim upon men’s hearts, as for that subtle something, that quality of air, that emanation from old trees, that so wonderfully changes and renews a weary spirit.” ~Robert Louis Stevenson, from "Forest Notes" (1875-1876)

1. Aims

- To maintain and improve the current areas of semi-natural woodland and scrub under Biodiversity Team management
- To increase the total extent of woodland and scrub from 96.3ha³⁴ to over 106ha within the Borough, through restoration of Beddington Farmlands and creation of new woodland
- To promote the importance of these habitats for biodiversity in the Borough and for citizens to contribute to data on veteran trees and woodland blocks

2. Introduction

The UK Woodland Assurance scheme definition of small woodland is an area 'up to 100 hectares (250 acres)'. However, it is accepted that woodlands can be considerably smaller; for example Little Woodcote Wood in Sutton is only 1.9 ha. Scrub includes scattered bushes, regenerating saplings and closed canopy vegetation and although there is no technical definition for scrub, it is generally accepted that it is an area dominated by locally native shrubs and tree saplings, usually less than 5m tall, occasionally with a few scattered trees. It is the dominance of woody species that distinguishes woodland and scrub from grasslands and other communities (although these can hold significant amounts of scrub).

Trees are tall, outcompeting most other species and become dominant as woodlands in the landscape. How tall they are and how dominant they become, depends on numerous variables, including the aspect of the land, nutrients, bedrock & soil characteristics, latitude and altitude. Suffice to say, woodlands are extremely variable. However, we are able to broadly group woodlands into the amount of 'interference' they have had over the millennia.

2.1 Natural Woodlands

Natural woodlands are those that have never been subject to human interference. In the UK there may be some areas, particularly in remote corners of Scotland within the native Caledonian Pine Forest, that remain untouched by man, but there is no evidence that this is the case.

2.2 Semi-natural woodlands - c.855,000ha

The second group, is *semi-natural woodlands*, i.e. woodlands that have been modified by man, often through long-term timber harvesting and rotational cutting. They have provided fuel, timber, game and medicines to humans for over 10,000 years, but most change has occurred as humans adopted a pastoral lifestyle. Impacts included relatively large scale deforestation to provide timber for permanent structures (houses, villages and proto-towns) and engineering projects (construction of barrows and Stonehenge, for example), as well as more systematic harvesting of materials, such as coppice, for fuel, animal pens etc.

Such intervention, over several thousand years created a wide range of structural and age variety for the native tree species, with corresponding responses by plants and animals. Semi-natural woodlands are divided into three further categories:

2.2.1 Ancient woodland.

Ancient woodland covers around 326,000ha in the UK and is predominantly native species with intact canopies, which have not been replanted. Most ancient woodland is composed of broad-leaved species but around 18,000ha is composed of native Caledonian Pine Forest in the Highlands of Scotland. Broadleaved ancient woodland is most heavily concentrated in the south of England (around 62%), with some counties with high proportions of their

woodland being ancient in origin. Around 77% of the woodland in Kent, for example, is either ancient or PAWS (see 2.2.2) .

Ancient woodlands have been heavily worked for many centuries and the type and intensity of the work creates shifting patterns of species in response to the exploitation of the woodland. Ancient woodlands are the most biodiverse terrestrial habitats because they have a number of habitats; open areas such as glades, meadows, and rides (wide paths); rivers, streams and ponds; high canopy; windthrows (trees blown over by strong winds); scrub edges and managed areas, like coppicing.

Ancient woodlands are those that have been in continuous existence and first mapped from in the UK from 1600AD onwards.

2.2.2 Plantations on Ancient Woodland Sites

Plantations on Ancient Woodland Sites (PAWS) are areas where the original canopy was felled and often replaced with more commercial timber species, sometimes broad-leaved species but often quick growing pine or spruce species. PAWS cover around 224,000ha of Britain. Although many woodlands lost their main, native tree species, many of the associated species and soils remained relatively intact, allowing some natural regeneration of broad-leaved species and associated plants such as bluebells, wood anemone, dog's mercury etc..

2.2.3 Recent woodlands

Around 305,000ha in the UK are composed of 'recent semi-natural' woodlands, where management was abandoned and woodland has regenerated. Previously open areas, like pasture, meadows and heaths, were used by landowners for taking a hay cut for winter feed, cropping young trees for fuel or feed, grazing etc. and this prevented natural regeneration. When these activities ceased as they became less economically viable, scrub and eventually woodland moved in. On the older 'recent sites', woodlands can be several hundred years old and contain a high proportion of the characteristics of ancient woodland.

In the last 70 years, post World War II, as the agricultural landscape changed, many areas have undergone an amount of self-seeding, particularly of species like ash and the non-native sycamore. These semi-natural but very young woodlands often have few features in common with ancient woodlands but can sometimes 'import' a couple of ancient woodland species, which have managed to survive in any nearby, old hedgerows.

2.3 Plantation woodlands - c. 1,876,000ha

The vast majority of Britain's wooded landscape is composed of recent plantations of large blocks of conifers. Around 29% of woodland in Great Britain is composed of a monoculture of Sitka spruce, naturally found on the NW coast of North America. This is more than than the coverage of all native broadleaf species. Scots pine makes up around 10% coverage, much of that not within its 'native' range of Scotland and lodgepole pine (another species of western North America) around 6%. Most of this planting occurred after the First World War as part of the 1919 Forestry Act.

Many sites for conifer afforestation were on cleared ancient woodland or other sites now deemed to be of high conservation value, such as lowland heath (Thetford Forest) and upland moor / blanket bog (Kielder Forest, for instance).

3. Current Status

3.1 Area & Distribution

In comparison with other European Countries, the UK has one of the lowest land areas covered by woodland, with all types of woodland contributing to around 13%⁸ of the land surface and of this only around 12% of this is actually semi-natural ancient woodland (c.326,000ha), whilst around 69% (1,876,000ha) is covered by recent plantation.

Our most comparable neighbours on the continent, France and Germany, have significantly higher coverage, around 27% land surface coverage for France and around 32% for Germany. Sweden and Finland have vastly more.

With such a massive decline from 80% to 13% of Britain's native woodland, it is no wonder than many species that depend on woodland have also been reduced in numbers and distribution.

3.2 Sutton's woodlands

Sutton's woodlands are composed mostly of lapsed plantations and areas of natural regeneration. Sutton is one of the least wooded of the London Boroughs, with only an estimated 1.5% cover of the land surface, but in contrast, has a high density of street and garden trees of over 40 trees per hectare⁹ compared to other London boroughs.

Where woodland is present, it exists as small discrete blocks with low connectivity. This is a product of clearance of forest in medieval times for pasture in the south of the Borough, and for arable crops and parklands in the north.

The main remaining woodlands are to the south of the borough, which is more rural, urban fringe

Ruffett and Bigwood is the largest block of woodland in the borough at 7.01ha. It is a Local Nature Reserve and part of the Green Belt and is owned by the Woodland Trust. It is composed of two rectangular woods, joined at a corner:

Bigwood is 4.5ha and is predominantly high canopy sycamore from the 1950s, with the remaining broadleaf species from the 1900s. These include Norway maple, ash, pedunculate oak and beech as canopy trees, with an understorey of elder, hawthorn and holly, with some hazel. Ancient woodland indicator ground flora includes some areas of bluebells, goldilocks buttercup, a couple of isolated patches of wood anemone and good numbers of dog's mercury. This site may lay claim to being the only native site for Martagon lily in Britain.

Ruffett Wood is just over 2.5ha and is predominantly high canopy sycamore, with some mature sycamore from the 1900s on the western boundary, as well as some mature oak and beech, some showing signs of 'veteranisation'. Ruffett Wood has more substantial stands of hazel, particularly bordering the circular path and these have been subject to rotational coppicing from the Biodiversity Team and Sutton Nature Conservation Volunteers (SNCV) for over a decade.

Roundshaw Woods is part of the wider Roundshaw Downs Site of Metropolitan Importance for Nature Conservation (SMI) and occupies around 4.5ha of predominantly self-seeded pedunculate oak. There are a number of mature grey poplars as canopy trees, whilst the

⁸ 3.17mha; England coverage is 10%, 15% in Wales, 19% coverage in Scotland and 8% in Northern Ireland

⁹ [https://www.forestry.gov.uk/pdf/ltwf_full.pdf/\\$FILE/ltwf_full.pdf](https://www.forestry.gov.uk/pdf/ltwf_full.pdf/$FILE/ltwf_full.pdf)

understorey is predominantly hawthorn, field maple and holly. Native bluebells are an uncommon ancient woodland indicator in the ground flora, whilst hybrid bluebells are quite numerous and reflect the proximity to houses and gardens. Stinking iris is another ancient woodland indicator species present in these woods, albeit at low numbers.

The 'shaw' along Plough Lane at Roundshaw Downs is reputed to be the only possible area of ancient woodland within the borough. Ordnance Survey map 127 (1804) shows a line of woodland to the east of Plough Lane; the shaw along Plough Lane would be the remnants of this longer tract of woodland. It has some mature ash, with some hazel and a dense blackthorn thicket on the eastern edge. Wild cherry is also present but the site is heavily trampled and there is little to no evidence for the ancient woodland indicators noted in the early 1990s (moschatel, wood sedge and goldilocks buttercup).

Queen Mary's Woodland was transferred (2012) to the Council from Queen Mary's Hospital and Orchard Hill Hospital and is around 5ha. It forms a contiguous woodland habitat with Wellfield Plantation. By 1868, a rectangular plantation of mostly conifers is shown on the Ordnance Survey map, roughly where Wellfield Plantation is now. Wellfield Plantation predates Queen Mary's Woodland by around 40 years, as the woodland within the hospital seems to have been, at least partially, planted around 1910. A number of exotic species, such as cherry-laurel, cedar, larch and pine species denote the formal planted nature of the hospital woodland, as well as, for the latter three species, remnants of the commercial plantations. Structurally, both Queen Mary's Woodland and Wellfield Plantation are similar, with a preponderance of canopy sycamore, with some mature ash. These two are the primary regeneration species. Both woodlands have some mature hawthorn but are heavily shaded; ivy blankets large areas of the ground and cloaks many of the trees. As such, there is little in the way of ground flora, particularly within Wellfield Plantation. Around the circular path within Queen Mary's Woodland are some patches of common and early dog-violet, with the ancient woodland indicator spurge laurel present in two places.

Work undertaken by the Biodiversity Team and Sutton Nature Conservation Volunteers has opened up and replanted around the circular path in Queen Mary's Woodland, removed cherry laurel to create wood pasture and created sunny flower rich meadows.

Greenshaw Wood is about 5.6ha in size and has been in continuous existence from at least 1866. It is likely that this woodland is a partial replacement plantation of oak on a previously felled larger woodland. The ground flora is very sparse, dominated by brambles and the canopy is very full, meaning there is little structural and light variability. A tarmac path runs through the middle of the wood and other areas are heavily worn from public access.

The Oaks Park has some relatively substantial areas of secondary woodland, mainly the perimeter plantation and two linear plantations running north, totalling around 16ha. A footpath and bridleway run around the eastern edge of the park and down the centre, adjacent to the golf course. Numerous trees (including mature beech) were lost in the storm of 1987, leaving remnant fallen and standing deadwood. The canopy has regenerated with quick growing species like ash and sycamore, as well as a replanting scheme composed of beech, wild cherry and birch. Ground flora of interest includes one patch of sanicle, one patch of wood anemone and several small patches of spurge laurel, as identified through a botanical survey undertaken by the Biodiversity Team in 2017.

Little Woodcote Wood is a small (1.9ha) area of sycamore with a few horse chestnuts and ash regeneration. Like most undermanaged woodlands in Sutton, the ground is blanketed in

ivy, with only a few tenacious ruderal species able to survive, including nettles and brambles along the pathways. The Downs Partnership has a management plan for the site and undertakes an amount of work, thinning sycamore, which is encouraging species such as sweet violet.

Beddington Farmlands is currently a working landfill site. The site is due to finish all landfill operation by the start of 2020. The site leaseholders, Viridor, are obligated to restore the site by 2023¹⁰. Part of the restoration works will include substantial woodland planting (c.5.71ha broad-leaved woodland, a fragment of wet woodland and c.4.5ha of scrub). This represents the best opportunity within the borough to increase total woodland cover, as many other available spaces for such substantial planting are either restricted for amenity use, in private ownership or, provide valuable habitats in their own right (such as chalk downland).

3.3 Scrub

Scrub is a complex habitat of a variety of low, bushy shrubs and on the North Downs, the cessation / heavy reduction of extensive pasturing / grazing has led, over the last 70 years or so, to a marked increase in scrub colonisation of chalk downland.

The majority of scrub within Sutton is predominantly hawthorn and blackthorn with bramble often constrained by management practices such as mowing or grazing prevents expansion. Other species, mainly associated with scrub on chalk, include purging buckthorn, wild privet, spindle, and wayfaring tree, all of which provide additional edge and 'in field' structure.

Scrub is an extremely important habitat in its own right but is often undervalued, due to the perception of it occupying 'unused' or 'abandoned' areas. Whilst there may be an argument for this when scrub may impinge upon other priority habitats (such as chalk grassland or neutral meadows etc.), if treated carefully, scrub provides significant gains for biodiversity on many sites.

Well managed scrub provides dense cover for breeding / nesting birds, escape from predators, as well as predation opportunities, nectar & pollen, berries & nuts and, perhaps most importantly, structural diversity.

In Sutton, the focus is on creating scrub fringing our chalk grasslands. The scrub is cut on a rotational basis, with around 50% retained as mature or overmature scrub and the rest cut before it becomes mature. The creation of a variety of age ranges and physical sizes within scrub mirrors woodlands grazed by large animals.. Cutting and removing scrub from 'scallops' (usually semi-circular areas of around 20-30m²) to create bare ground or leaves low vegetation (depending on what scrub has been removed). This creates thermal variation, as bare ground or low vegetation warms more quickly than taller vegetation, reduces humidity and increases 'edge effects' - the transitional habitats from bare ground / low vegetation through taller grass & flowers, tall ruderal species (nettles, rosebay willowherb etc.), through bramble and regenerating scrub species and any tree saplings that may have taken an opportunity to grow, ending with the mature and overmature canopy shrubs.

In addition, a number of species, particularly invertebrates, require specific age ranges of limited species of host food plant. Blackthorn of 2-3 years old is the almost exclusive foodplant for the caterpillars of the brown hairstreak butterfly. This species has suffered significant declines in its range across the UK, primarily driven by the wholesale loss of

¹⁰ [Restoration Management Plan](#)

hedgerows and a reduction in traditional management techniques, which promote growth of the correct age through rotational cutting. Brown hairstreak is a target species for scrub within Sutton under the Higher Level Stewardship agreement HC16 (see 5.2.3 below).

Scrub also dominates railway line sites, although this is often composed of non-native species or is undermanaged for many years, before being severely cut back.

3.4 Trends

From 1919, the UK has seen a substantial increase in woodland cover, from an estimated 5% in 1901, to about 13% today. The 7% increase is mainly attributable to commercial forestry with the planting of quick growing non-native conifers for timber.

A significant reduction in traditional management for the exploitation of woodland products, particularly in native woodlands, has led to widespread and alarming declines in range and populations of numerous animal and plant species.

The loss of butterflies, such as the pearl-bordered fritillary from the south-east and the massive contraction in range of heath fritillary nationally are causally linked to the decline in coppicing, a traditional management technique for harvesting material for charcoal and building materials. The single-stemmed tree is cut to just above ground level but will (depending on the species and age of individual) send up multiple new shoots. These are then harvested on a 10-15 year cyclical. The cyclical cutting creates niche habitat for a diverse range of species. Freshly coppiced areas are necessary for creating warm areas with plenty of violets for pearl-bordered fritillary caterpillars, or cow wheat for heath fritillary caterpillars (where these species now persist), whilst dense thickets of older coppice were used by nightingales and dormice. Without this intervention, woodlands become more shaded and humid.

Traditional woodland management techniques are being utilised more often, as evidence of the benefits for species dependent on cyclical intervention becomes more understood. However, this is primarily being undertaken by conservation charities.

Some woodland species have not only weathered the lack of traditional management but have even improved in population or have expanded their range. The silver-washed fritillary is a large, graceful butterfly that likes shady woodlands and has increased its range over the last 40 years (**Figure 2**). This is likely to be a combination of increased availability of violets growing in dappled sunlight conditions (rather than the open conditions resulting from coppicing) and climate change. However, this butterfly also needs sunny and warm woodland rides (wide paths) with plentiful nectar sources (sunny bramble thickets are ideal), so some management is necessary to keep these rides open.

The great storm of 1987, caused the loss of hundreds of thousands of trees. The Oaks Park is thought to have lost in the region of 15,000 trees alone. Although replanting efforts were undertaken, the composition of the woodland has changed markedly, from mainly beech to sycamore and ash. These two species characterise many undermanaged secondary woodlands in Sutton that tend to be botanically poor.

The absence of significant grazing, as well as disturbance through felling and dragging timber, has favoured species such as holly and ivy. The evergreen nature and vigour of these species often leads other species struggling to compete for light. Whilst both are of high value for nature, providing cover, nectar and berry resources, they can be too prevalent. Coupled with issues from Invasive Non-Native Species (INNS), such as

snowberry at the Spinney and Roundshaw Woods or cherry laurel shading out the native flora, our woodlands are far from being in peak condition.

Figure 2 - Male silver-washed fritillary nectaring on marjoram (© D. Warburton)



'Tidying' and concerns about health and safety have led to dramatic declines in fallen and standing deadwood. An oak may spend over 300 years or more rotting down after dying and at every stage over those centuries plays host to a changing variety of different invertebrates and fungi. There is an increasing acceptance amongst land managers of retaining deadwood for biodiversity, as long as it is away from paths and buildings. Cutting standing dead trees into 'totem poles' or 'monoliths' can make them safe and provide valuable habitat.

The overuse of woodlands, particularly in heavily populated urban areas, can result in negative effects, such as soil compaction, disturbance to animals and plants (particularly ground-nesting birds), vandalism and even the perception that they are unsafe. These factors can result in unsympathetic vegetation clearance to improve sightlines, an impoverished ground flora and lack of structural diversity.

Climate change is likely to cause a further shift in species composition. There may be an overall increase in average temperatures and an overall decrease in total rainfall over the coming decades, if the models are correct. Adding to the challenges are an increasing number of pests and pathogens. Ash dieback *Hymenoscyphus fraxineus*, several virulent *Phytophthora* fungal-like infections and pests like oak processionary moth are now here to stay.

Planning tree replacement for the next 100 years plus, to ensure we have appropriate age ranges of tree cover, is extremely difficult, as climate change and pest species and pathogens may limit the suitable tree species.

4. Specific Factors Affecting the Habitats

4.1 Major factors

- Afforestation of commercial tree species replacing native species
- Delivery of Biodiversity Net Gain
- Inappropriate management or neglect of ancient woodland, scrub and hedgerows, often due to a lack of money & resources to manage these habitats
- Fragmentation and isolation of sites
- Selling off woodland for development
- Climatic changes
- Loss of deadwood habitats
- Pests and pathogens

4.2 Supplementary factors

- Recreational pressures from people trampling areas (creating muddy paths and squashed vegetation), disturbance of species (in particular, ground nesting birds), dumping, vandalism and nutrient enrichment from dog faeces.
- Reinstatement of traditional management techniques (e.g. coppicing)
- Increases in deer browsing, reducing seedling growth / coppice regrowth
- Reduction of low intensity grazing creating more mosaic habitats
- Reduction in landscape scale genetics through habitat fragmentation
- Atmospheric pollution and nutrient enrichment
- Establishing woodland on other valuable habitat (e.g. grasslands)
- Successional processes (both positive and negative)
- Desire for new planting
- Health and safety requirements of unsafe trees
- Invasion of aggressive non-native species
- Recreational overuse
- Opportunities for complementary recreational use

It is clear that many of the major and supplementary factors affecting woodlands do not occur in isolation; fragmentation and isolation of sites, pressure for development and reduction in landscape scale genetics are all intimately linked, for instance.

5. Current Action

5.1 Legal Status

Lowland mixed deciduous woodlands are a Priority Habitat under the NERC Act 2006. Numerous species strongly or solely associated with lowland mixed deciduous woodlands are also Section 41 Priority Species and some have legal protection through the Wildlife and Countryside Act (WCA) (1981, as amended) and the The Conservation of Habitats and Species Regulations 2017. Protected species associated with woodlands include the stag beetle, badger and all bat species. That considerable numbers of breeding birds and bats use trees to nest or roost in effectively means that those trees are protected from felling

during the bird breeding season (mid-February to September) and the bat roosting season (ostensibly, April through to October but can vary depending on temperature).

There are a number of statutory designated Local Nature Reserves (LNRs) and non-statutory designated Sites of Importance for Nature Conservation (SINCs) within Sutton, which have a woodland or scrub component.

Many trees and hedgerows are protected by Tree Preservation Orders and are within Conservation Areas.

5.2 Mechanisms affecting the Habitat Action Plan

5.2.1 Policies

Agreed in 2005, the Mayor of London, the Greater London Authority and the Forestry Commission are committed to maintaining and enhancing London's trees and woodlands through the London Tree & Woodland Framework, to meet the goal of no overall loss of habitat for wildlife and access to quality 'natural' space. The Framework provides guidance on the right place for the right tree, to help ensure that London remains green in the face of pressure from a growing population and economy. Unfortunately, no current Woodland Habitat Action Plan for London currently exists.

The Mayor of London's Biodiversity Strategy (2005) is currently being updated to reflect national policies such as the National Planning and Policy Framework (NPPF) (2012), the Natural Environment White Paper (2011) and Biodiversity 2020 (2011), amongst others. The Mayor's Biodiversity Strategy aims to set out what *the strategy has achieved to date, and where the leadership and support of the Greater London Authority needs to focus in the future in order to support the collective endeavour of those organisations working to protect and manage London's natural environment.*¹¹

5.2.2 Historical Management

Within the Borough, practical woodland management is carried out at a number of sites, including Roundshaw Woods, Queen Mary's Woodland and Ruffett and Big Wood by the Biodiversity Team, with strong assistance from Sutton Nature Conservation Volunteers (SNCV) and funding of works at Ruffett & Bigwood by the Woodland Trust. Other tracts of woodland within the borough receive little management, other than litter picking and tree health and safety assessments.

Scrub management is undertaken on a number of sites and aims to restrict scrub movement into other habitat types of value (wetlands, grasslands, etc.) and to create a diverse structural composition of value to a wide range of animal and plant species.

5.2.3 Higher Level Stewardship

Three chalk grassland sites also contain actions in regards successional scrub (code HC16), in addition to two sites having an agreement for the management of a hedgerow (both sides - code HB11).

HC16 successional scrub actions are undertaken at Carshalton Road Pastures, Cuddington Meadows and Roundshaw Downs to provide suitable habitat for stag beetle and brown

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<http://www.london.gov.uk/LLDC/documents/s44476/05a%20Biodiversity%20Strategy%20Update%20-%20Appendix%201%20-%20Working%20Draft%20Document.pdf> (pg.5 draft copy).

hairstreak butterfly (see 3.3 above), whilst hedgerows of very high environmental value (HB11) are managed at Roundshaw Downs and Anton Crescent Wetland.

Continued management of these two agreements is necessary to ensure continued funding from the Higher Level Stewardship scheme.

5.2.4 Environmental Strategy

The Environmental Strategy seeks to plant 2,000 trees by 2022.

5.2.5 Resource Availability

One of the aspirations of this Biodiversity Strategy is to utilise compensation monies delivered through Biodiversity Accounting to deliver the creation and enhancement of woodlands and scrub within Sutton but this is at an early stage and requires further resource input.

Longer term funding options are restricted. There is a possibility that woodland grants through Countryside Stewardship: woodland support¹² may provide some assistance in sympathetic management and dealing with diseased trees through felling and restocking.

6. Priority Species

These species are indicators of higher quality environments and, often, are highly distinctive and recognisable, for even the untrained.

Common Name	Latin	Brief Description
Silver-washed fritillary	<i>Argynnis paphia</i>	Majestic swooping butterfly of wide, sunny rides within woodlands, males have distinctive androconial (sex) brands on the upper wing
English bluebell	<i>Hyacinthoides non-scripta</i>	A classic species of woodland that has undergone some form of management, like coppicing, where bluebells thrive in the new bare areas. The English species is suffering from hybridisation with the imported Spanish bluebell
Stag beetle	<i>Lucanus cervus</i>	Adult males are the UK's largest terrestrial beetle, with massive 'antlers' used for wrestling other males for prime deadwood habitats to entice females to lay eggs into. The larvae spend up to 7 years underground feeding on rotten wood. South London is a hotspot for this species.
White-letter hairstreak	<i>Satyrion w-album</i>	Hugely impacted by the death of elms due to Dutch Elm Disease, this species is recovering through switching host plant to wych elms and other resistant elm species

¹² [Countryside Stewardship: woodland support](#)

Purple hairstreak	<i>Neozephyrus quercus</i>	An elusive canopy dweller, usually only glimpsed through a flash of silvery underwings on a summer evening. Caterpillars have oaks as their larval host plants, whilst adults feed on honeydew (aphid excreta) at the top of sunny oaks.
Brown hairstreak	<i>Thecula betulae</i>	A butterfly of blackthorn scrub, this species has declined significantly. It naturally lives at a low population density and seeks out 'master' trees to engage in courtship.
Violets	<i>Viola reichenbachiana</i> & <i>V. riviniana</i>	Larval host plants for a variety of woodland butterfly species, including silver-washed fritillary, as well as species lost from the south east, such as pearl-bordered fritillary

7.0 Objectives and Actions

This action plan aims:

- To maintain and enhance the current areas of semi-natural woodland, scrub and trees which are under the management of the Biodiversity Team to maximise biodiversity
- To maintain and protect those trees granted protection through the planning system
- To enhance the condition of the successional scrub entered into the Higher Level Stewardship agreement
- To create new woodland
- To increase public appreciation of the flora and fauna of woodlands and scrub

Rationale:

There are 13 SINC's in Sutton that are primarily composed of woodland and scrub. 2 woodlands have been declared Local Nature Reserves. In addition, 395 individual trees are protected by Tree Protection Orders, and 3 trees with provisional orders.

7.1 Habitat Targets

7.1.1 Long Term Target

- To create 8ha new woodland, hedgerows and / or orchard areas and improve 7 ha of existing woodland areas for biodiversity by 2050.

7.1.2 HLS Targets

HB11 Species rich hedges (both sides) - Roundshaw Downs (410m), Anton Crescent Wetland (140m)

Indicators of success

- By year 5, hedges should be at least 2m in height and 0.75m in width (measured from the centre of the hedge), unless they have been laid or coppiced.

- Each year, there should be some uncut hedgerows on the holding

HC16 Successional scrub - Roundshaw Downs (2.8ha), Carshalton Road Pastures (0.7ha) and Cuddington Meadows (0.15ha)

Indicators of success

- Brown Hairstreak & Stag Beetle should be present or have a suitable habitat provided throughout the HLS agreement
- By year 5, cover of shrub species Juniper / Box / Hawthorn / Blackthorn etc should be between 50% and 85% of the area. The vegetation within 2m of the edge of the scrub should be taller than 30cm
- By year 5, shrub species should have a diverse age and height structure. No more than 50% of the scrub area should be mature, or over-mature
- By year 5, tree species (native species) should be present at irregular spacings, with an overall canopy of between 5 - 10% of the area
- By year 5, grasses and wildflowers including those found in the surrounding BAP habitat should be between 5cm and 15cm tall on 10% to 30% of the area cut into the scrub in “scallops” and in small open areas
- By year 3, the following undesirable species Ragwort / Creeping Thistle / Dock should be no more than occasional
- Archaeological /historic Airfield in 8189 (Roundshaw) has suffered no further degradation

7.2 Habitat Action Plan Targets:

7.2.1 Targets:

- WS1 To increase upon the current extent of woodland and scrub within LB Sutton. Baseline 65.6ha (GIGL data 2006). Target 76ha
- WS2 To enhance the quality of woodland and scrub areas through the Higher Level Stewardship scheme and any external funding programmes
- WS3 To create 1ha of new woodland
- WS4 To protect the current and future extent of woodland from development and to protect and maintain veteran trees through the planning process
- WS5 To promote the importance of woodland and scrub for biodiversity in the Borough

7.2.1 Actions

Code	Action	Lead
WS1	To increase upon the current extent of woodland and scrub within LB Sutton. Baseline 65.6ha (GIGL data 2006). Target 76ha	
WS 1.1	To monitor and advise that proposed scrub and woodland planting at Beddington Farmlands, as part of	CAMC / Senior

	agreed upon restoration, is undertaken to best practice, as laid out in RMP v9.1. Target: create 0.21ha wet woodland; 5.71ha broadleaf woodland; 4.58ha scrub & 4453m of hedgerow by 2023 (10.5ha total + hedges)	Biodiversity Officer
WS2	To enhance the quality of woodland and scrub areas through the Higher Level Stewardship scheme and any external funding programmes.	
WS 2.1	Manage and enhance those sites within the HLS scheme under designation HC16 to achieve HLS targets. Target: 3 sites ¹³ with up-to-date management plans reflecting HLS targets and prescriptions and with indicators of success achieved by 2023.	Senior Biodiversity Officer
WS 2.2	Manage and enhance those sites within the HLS scheme under designation HB11 to achieve HLS targets. Target: 2 sites ¹⁴ with up-to-date management plans reflecting HLS targets and prescriptions and with indicators of success achieved by 2023.	Senior Biodiversity Officer
WS 2.3	Undertake annual Phase 1 and woodland condition surveys on woodland sites under Biodiversity Team management. Record all data on recorder and share with GIGL. Target: 2 sites ¹⁵ per annum until 2025.	Senior Biodiversity Officer
WS 2.4	Investigate and apply for, if applicable, Countryside Stewardship for woodlands managed by the Biodiversity Team. Target: Queen Mary's Woodland & Roundshaw Woods under CS woodland management grants by 2020 (if applicable).	Senior Biodiversity Officer
WS 2.5	Consult on and, if applicable, undertake appropriate enhancement works to Queen Mary's Woodland and Roundshaw Woods to maximise biodiversity, including selective thinning, underplanting / restocking and wildflower promotion. Funding from net Gain would be required to undertake the enhancements. Target: 4ha improved by 2025	Senior Biodiversity Officer
WS3	Create 1ha new woodland	
WS 3.1	Identify possible areas within the borough for woodland creation Target: 1ha mapped by 2021	Senior Biodiversity Officer
WS 3.2	Cost out habitat creation Target: 1ha costed by 2022	Senior Biodiversity

¹³ Carshalton Road Pastures; Cuddington Meadows ; Roundshaw Downs

¹⁴ Anton Crescent Wetland; Roundshaw Downs

¹⁵ Queen Mary's Woodland & Roundshaw Woods

		Officer / Asset Management
WS4	To protect the current and future extent of woodland from development and to protect and maintain veteran trees through the planning process	
WS 4.1	To implement Local Plan Policy 26 on protecting and enhancing sites, through the delivery of the Biodiversity Strategy and assessment of planning applications that may impact on designated sites.	Senior Biodiversity Officer / Principal Tree Officer
WS 4.2	To survey designated woodland sites not managed by the Biodiversity Team to appraise their suitability for retention within the current SINC designations. Target: 4 sites ¹⁶ by 2020.	Senior Biodiversity Officer
WS 4.3	To identify veteran trees across all Council sites, recording details onto the dedicated tree database, including description. To routinely conduct recorded inspections, frequency of inspections dependant on site usage. Work recommendations to be based on safety issues and minimal intervention work only. Target: All veteran trees identified and details recorded onto database by 2022	Senior Arboriculture Officer
WS5	To promote the importance of woodland and scrub for biodiversity in the Borough	
WS 5.1	Engage volunteers and members of the public in woodland flora and fauna through survey events, guided walks, training days, etc. Target: Annual Phase 1 survey with volunteers of Queen Mary's Woodland and Roundshaw Woods until 2023 and 10 walks / training days / events for the public on any designated woodland SINC by 2024.	Senior Biodiversity Officer / SNCV

¹⁶ Revesby Wood; Greenshaw Wood; Oaks Park woodland; Woodmansterne Road edge woodland

Appendix B3: Rivers & Wetlands

Habitat Action Plan 2019 – 2024



Male banded demoiselle damselfly on the River Wandle (© D. Warburton)

1. Aims

- To maintain and enhance rivers and streams for biodiversity throughout the Borough, through implementing the Catchment Plans for the River Wandle and Beverley Brook, to naturalise river channels and processes
- To maintain and enhance existing areas of wetlands for biodiversity through implementing good practice and completing Higher Level Stewardship targets
- To monitor rivers and wetlands to evaluate their ecological status
- To promote the importance of rivers and wetlands for biodiversity and low impact recreation and relaxation
- To implement and increase the number of functional SuDS schemes

2. Introduction

Geologically, Sutton is a borough of two halves: the southern half is elevated as the most northerly aspect of the North Downs chalk ridge, whilst the northern half of the borough is, predominantly, lowland floodplain from the River Wandle, which emerges from a spring line where the chalk ends, running east to west through Carshalton village.

The lower, flatter north of the borough is composed of alluvial sands and gravels, as well as London clay. These geological beds provide suitable substrate for the formation of wetlands adjacent to the Wandle. The historical quality of Wandle water and the suitability of water retentive substrate provided ideal conditions for wetland areas, both natural and manmade, such as extensive watercress beds and calico fields.

This Habitat Action Plan considers a broad range of riverine and wetland habitats, including flowing water in rivers and streams, ponds and lakes, reedbeds, swamps and marshes, as well as associated wet grassland. Many of these habitats interdigitate to form complex habitat mosaics of significant value to wildlife. All have a supply of water, be it through capture and storage of rain, a high groundwater level, spring fed or as flood attenuation areas or a combination of all four.

2.1 Rivers and Streams

The permeable chalk to the south of the borough captures and filters rain falling on the North Downs. This, over time, percolates through the rock until it hits an impermeable layer, which forces the water out of the ground and into a river or stream. The main body of water within the London Borough of Sutton is the River Wandle, one of the tributaries for the River Thames.

As a chalk stream, the Wandle is an extremely important biodiversity feature for the Borough, one of only 200 chalk rivers in the world! As the UK contains c.85% of chalk streams and rivers on the globe, we have an international responsibility to maintain and enhance these precious habitats. These include all of the components that make these rivers special, including the gravel bottom, riffles and pools, aquatic vegetation and what should be species rich banks.

The Wandle has two arms, one rising from springs in Wandle Park in Croydon, the other rising from a spring line in Carshalton around St. Philomena's school, Sutton Ecology Centre and The Grotto in Carshalton Park. Due to water abstraction over the years, the groundwater level has dropped, reducing and virtually eliminating flow from this spring line in all but the wettest periods. The Carshalton Arm of the Wandle is supplemented through

back-pumping water upstream from Watermead Lane to Carshalton Ponds by Honeywood Museum. During the winter of 2013/14, the groundwater rose and flowed from The Grotto (see **Figure 3** below) as it did from when it was first built in 1724 and periodically until 1976, as well as by Carshalton Ponds and St. Philomena's school.

Figure 3 - Water flowing from the Grotto in Carshalton Park (Feb 2014) (© D. Warburton)



The Wandle was extremely well regarded for trout fishing, as well as historically being very industrious, with watercress beds and calico works, as well as a large number of mills along its length. The Wandle has quite a marked drop from source to mouth and coupled with a relatively short length (some 9 miles, 14km), made it ideal for running water mills.

Over time, the industrial usage of the Wandle led to its wildlife habitats being deleteriously impacted, though pollution from the various gunpowder, paper and dye mills, raw sewage from housing, runoff from farming on the banks and general despoiling. With a reduction in water quality, the trout and most other creatures left, leaving a fairly sterile river. The creation of Beddington Sewage Works in 1902 and improvements in household sanitation helped reduce the amount of raw sewage entering the river but this was replaced with other problems, compounded in the early and mid 20th Century through canalisation and straightening of the river, reduction in remaining riverside habitats and trees, surface water runoff from roads adding pollutants and heavy metals, increased nitrogen and phosphorous from farm runoff (although this is likely to be relatively small) and point pollution from misconnections to waste pipes.

Two other smaller running water bodies are within Sutton: the Pyl Brook and the Beverley Brook. The Beverley Brook rises near Nonsuch Park and is culverted underground for the

first part of its life, emerging in Cuddington Recreation Ground and running for a short length through the Rec, before being culverted underground through Worcester Park, emerging again at Green Lane, before being culverted underground out of the borough just past the old Worcester Park Sewage Works (now The Hamptons and Mayflower Park).

The main channel of the Pyl Brook rises above ground just to the east of Anton Crescent Wetland, just to the northwest of Sutton town centre and runs roughly west, flowing past Anton Crescent Wetland (which is used as a Flood Storage Wash for the Pyl), under the A217, out again behind Tesco's and then past Hamilton Recreation Ground, where a meander and backwater were created in 2009. From there, the brook is heavily canalised, running past Kimpton Balancing Pond (which discharges into the brook) and under the A24 out of the borough to eventually join up with the Beverley Brook.

The east channel of the Pyl Brook emerges above ground near Sutton Common railway station and flows north past Rosehill Recreation Ground before turning west at the borough boundary just north of Rutland Drive, near Sutton Common and then out of the borough under the A24 and through Morden Park, where it rejoins the main channel in the sports ground north of North East Surrey Crematorium.

A variety of legislation has been passed, most notably the Rivers (Prevention of Pollution) Act 1961, the Water Resources Act of 1991 and the Water Framework Directive 2000, all seeking to improve the quality of water in rivers, reduce pollution and latterly, restore, as far as is practicable in many cases, the natural flow and processes of the river.

Water quality has improved markedly due to the above (and other) legislation, allowing the partial return of brown trout and the invertebrates this species, and others, require.

2.2 Standing Water

Standing water ranges from small garden ponds to large lakes and is predominantly still or very slow flowing. The edges are often highly modified, particularly in parks, gardens and other open spaces, whereas standing water areas within nature reserves have a much more naturalistic edge and are often heavily vegetated with common reedmace (also known as bulrush), great willowherb and sometimes, a thin fringe of common reed. Denser stands of reed are classified as reed bed (see **2.3**) below.

Standing water provides a wide range of conditions for various aquatic plants, which in turn create varied structural diversity within the water column, as well as above water and around the fringes. The pond bottom supports a variety of 'submerged aquatics', such as rigid hornwort, mare's-tail and water milfoil species. In shallower waters, all of these species can produce an aerial flowering spike. There are numerous species which have at least part of the plant sat on the surface of the water. These are 'floating aquatics', including the familiar white and yellow water lilies, various species of water-crowfoot, starworts and pondweeds. Moving into shallower water, we find emergents, including species such as flowering rush, various sedge and rush species, reedmace and common reed, as well as reed-like grasses, such as sweet-grass. In the driest parts of the pond, are the marginals, which include purple-loosestrife, flag iris and marsh marigold.

In general, more species are adapted or able to utilise standing water in comparison to running water but this depends enormously on the range of conditions found within standing versus running water, nutrient levels and niche availability.

Familiar species, such as frogs, toads and newts are integral parts of urban standing water sites, for at least part of their lifecycle, as are some common and widespread invertebrates,

including dragon- and damselflies (Odonata), pond skaters and the less desirable, including midges (sub-order Nematocera) and mosquitoes.

2.3 Reedbeds

Common reed dominates reedbeds, making this an unusual habitat, in that it is usually the case that the greater the botanical species diversity within an area, the greater the chances for increased animal and fungal species diversity. However, having a 'monoculture' of reed can provide very high animal diversity, although a limited botanical diversity. In particular, a number of bird and insect species (primarily beetles, flies and moths) are reed bed specialists.

Bird species strongly associated or dependent on reedbeds include reed warbler, sedge warbler, reed bunting, bearded reedlings and bittern. Invertebrates strongly associated with reedbeds include Fenn's wainscot moth, reed leopard moth, the spider *Clubiona phragmitis*, the fly *Parochthiphila spectabilis* and a large variety of other species. Recent invertebrate surveys have confirmed some 40 UK species are dependent on reedbeds, whilst over 600 species are wetland specialists.

Most reedbeds are being managed primarily for conservation, with the cutting of reedbed compartments undertaken on rotation to provide structural diversity, from fresh new growth to old growth and litter layers, with a small amount of scrub.

2.4 Wet grassland

Wet grassland is a scarce UK habitat, heavily reduced in area and quality since the introduction of hydrocarbon fertilisers, improved drainage and intensive agriculture. The vast majority of seasonally damp or inundated grasslands, including water meadows, have disappeared and with them, the wide range of flora and fauna they supported.

Numerous bird species are strongly associated with wet grasslands, including breeding lapwing, snipe, redshank and yellow wagtail, whilst flowers in decline include greater bird's-foot trefoil, sneezewort, snake's-head fritillary, devil's-bit scabious and various orchids, such as southern marsh orchid.

2.5 Sustainable Urban Drainage Systems

Sustainable Urban Drainage Systems or Sustainable Drainage Systems (both shorted to SuDS) are an approach to manage drainage in or around developments in a more natural way, linking water capture (attenuation), transport (conveyance), water quality and biodiversity.

SuDS can utilise balancing ponds, water tanks, soakaways, green roofs, filter strips, bioswales and permeable paving to reduce the amount of water entering surface run-off drains, helping to reduce downstream flooding. The SuDS hierarchy¹⁷ should always be utilised.

This Biodiversity Strategy aims to increase the number of SuDS schemes providing benefits for local wildlife.

3. Current Status

3.1 Area & Distribution

¹⁷ [Policy 13 SuDS Hierarchy](#)

3.1.1 Rivers & streams

As noted above, the main river in Sutton is the River Wandle, a groundwater fed chalk stream. Of its total 9 miles (14 km) length, a little less than 4 miles (5.9km) comprises the Sutton extent. Recent works on the river within Sutton, led by the Wandle Trust (part of the South East Rivers Trust SERT) have improved inriver and marginal habitats, by removing toe-boarding and concrete banks, reducing channel width, increasing flow rates and natural scouring, creating slack water areas and reducing tree shading. Key examples of improvements are shown at Hackbridge and along Mill Lane / Butter Hill in Carshalton (Figure 4).

Figure 4 - Restoration works at Butter Hill (©South East Rivers Trust)



3.1.2 Standing Water

Lakes are generally defined as areas of water greater than 2 ha. There are a number of artificial lakes and ponds of varying sizes throughout the Borough. The larger lakes are a result of gravel extraction.

Artificial lakes have been created at Worcester Park and Beddington Farmlands. The lakes and islands at Beddington Farmlands have been created to benefit key bird species, such as little ringed plover and redshank, although their current use for breeding pairs of these species is severely constrained, due, in part, to the amount of gull activity on the working landfill site. With the recent reduction in landfill and full cessation of landfill in late 2019, gull numbers should reduce substantially, thereby improving breeding chances for wading birds using bare ground / light cover.

There is no accepted definition of a pond but these are generally recognised as small water bodies, less than 2ha. Ornamental ponds can be found at Beddington Park and Carshalton

Ponds, providing roosting and nesting habitat for familiar species of waterfowl, such as tufted duck, Canada geese, mute swans, mallard, coot and moorhen.

Ponds that are actively being managed for nature conservation can be found at Sutton Ecology Centre and Anton Crescent Wetland. Thousands of school children visit the Ecology Centre every year, and carry out pond-dipping to discover smooth newts, common frogs and toads, and invertebrates such as dragonflies and damselflies.

Works by the Environment Agency in early 2017 at Anton Crescent Wetland have significantly altered the wetland aspects of the site, through removal of reed bed and willow carr and the de-silting and reprofiling the pond area. Through these works and extensive replanting of native, local species, the site will be enhanced for flora and fauna.

3.1.3 Reedbeds

Reedbeds in Sutton are all less than 1 ha in size but can provide important habitat for breeding birds. Spencer Road Wetlands is a naturally occurring reedbed of about 0.75ha, whilst artificially planted reed beds exist at a number of sites; c.0.1 ha at Anton Crescent Wetland (it is planned to expand this through re-stocking), a tiny area at Sutton Ecology Centre and a developing reedbed at Beddington Farmlands. Once the creation of this habitat is complete, there should be around 2ha of reedbed in the southern lake, whilst reeds fringing the lakes, channels and ditches within the wet grassland may increase this, up to 4ha or more in total.

3.1.4 Wet grassland

Wet grassland within Sutton is very rare, existing mainly of 0.5ha in Beddington Park. This small area contains a number of borough and London scarcities, including southern marsh orchid, great burnet, water pepper and marsh arrowgrass.

A tiny area of wet grassland occurs at Kimpton Balancing pond, containing species such as sneezewort, greater bird's-foot trefoil, meadowsweet and the grass marsh foxtail.

Sutton Common Paddock is a seasonally damp, poorly draining area of about 1.66ha. Recent attempts have been made to improve the site for wildflowers, specifically lowland wet grassland species but have not had much impact, in the main, likely due to the dominance of the vigorous grass species creeping bent. Further attempts are being made to reduce the dominance of creeping bent, to fulfil the Higher Level Stewardship targets.

As part of the restoration of Beddington Farmlands, over 14ha of wet grassland will be created, primarily for breeding waders such as snipe and lapwing.

3.1.5 Sustainable Urban Drainage Systems

There are numerous examples of SuDS in usage but few with specific biodiversity gains. Kimpton Balancing Pond and Caraway Place Pond are both examples of larger SuDS for developments that provide opportunities for local wildlife but more can be done to provide wildlife and aesthetic gains at more sites, whilst dealing with flooding issues.

3.2 Trends

3.2.1 Rivers and streams

Sutton is fortunate in having a substantial stretch of one of the very few chalk rivers in the

capital. The Carshalton Arm has recently been awarded the status of 'Good Ecological Potential' under the classification used by the Water Framework Directive (WFD). This is the highest award that can be given to water bodies that have been heavily degraded and for which significant changes (due to water abstraction and public pressure), are unlikely to be achieved, particularly in a very urban environment. The award is heavily based on improvement works undertaken by the Wandle Trust.

There is a substantial amount still to do in improving the Carshalton Arm, including dealing with point pollution (misconnected pipes etc.), undertaking more improvement works including removing barriers to fish migration, improving flow conditions and dealing with nutrient levels, some of which is highly likely to be linked to the huge amount of bread put into Carshalton Ponds to 'feed the ducks'. Future challenges will also include dealing with low flow conditions from continued and increased demands on water supply which, when combined with the predicted climate change of drier summers, will almost certainly increase pressure on the River.

The Croydon arm of the Wandle has not had a great deal of improvement so far but this is set to change, at least in part, over the next few years. The lake in Beddington Park has been de-silted and will be planted with a number of aquatic plants but a fish pass was not installed through the HLF project, due to prohibitive costs.

The Stock Pond has also been de-silted, regraded and replanted. Some willow and alder felling has taken place, whilst water levels can be controlled through provision of a groundwater tapping borehole, which will provide clean water to the pond, as and when required.

Improvements like these and those along the Carshalton arm will go some way to restoring some of the productivity of the river, in being able to support a variety of flora and fauna. Spring fed chalk rivers, such as the Wandle, are categorised as among the most biologically rich and productive of all habitats. This is a product of clear water, moderate nutrient levels and a gravel substrate, providing ideal conditions for a diverse community of submerged and waterside plants to become established. This in turn supports a rich and diverse range of invertebrates and fish species. Watercress, fool's watercress and lesser water parsnip can be found forming extensive beds, whilst stream water crowfoot *Ranunculus pencillatus* ssp. *pseudofluitans* is apparently increasing in distribution.

Recent releases of captive bred brown (river) trout and salmon by the Environment Agency and the Wandle Trust have been undertaken, to augment the existing fish population. Trout appear to be breeding in numbers within the river.

Until recently, urban development right up to the waterside, had altered the structure of the natural course of rivers and streams. This decrease in the amount of available floodplain, reduced floodplain connectivity and increased canalisation, has had detrimental impacts by removing valuable habitat for biodiversity. However, even in low flow rivers like the Wandle, the potential of flooding is leading to a significantly more cautious approach being applied, with re-naturalised water courses being significant contributors to reducing flooding.

Insensitive in-channel management, 'tidying' the river banks and vandalism to the river, including dumping of rubbish, all contribute to continuing problems along the river, reducing the ability of species to move freely between high quality habitats.

Over the last 2 decades or so, invasive non-native species (INNS), such as floating pennywort *Hydrocotyle ranunculoides* and parrot's feather *Myriophyllum aquaticum* cause problems in-channel and bankside species such as Himalayan balsam *Impatiens grandiflora* and Japanese knotweed *Fallopia japonica* have all contributed towards a degraded system. The Wandle Trust / South East Rivers Trust has recently started tackling all of the above species in a systematic manner.

On a more positive note, both biological and chemical water quality continues to improve. Better sewage treatment and better quality discharges, particularly relevant in Sutton from sites such as Beddington Farmlands, has led to a reduction in the amount of pollutants, such as phosphorus, entering rivers causing negative impacts from eutrophication.

Indicators of a cleaner Wandle are the established breeding populations of declining bird species, such as kingfisher and grey wagtail, a species in moderate decline. Damselfly species associated with rivers of this type, including banded demoiselle and beautiful demoiselle appear to be expanding their ranges up- and down-stream, possibly connected to climate change but most likely due to improved river conditions, in terms of water quality, flow and bankside vegetation.

For all of the improvements to the Wandle, these still occupy a small amount of its total length and the river requires substantial input to restore it to its former glories.

The Pyl Brook and Beverley Brook are heavily degraded and canalised, with little practical work so far to change stretches of the river. The Beverley Brook catchment plan will attempt to deal with some of these issues and, out of borough improvements have already started, such as at Richmond Park and near Tolworth.

3.2.2 Lakes and ponds

There are a number of permanent and ephemeral water bodies located throughout the Borough.

Problems experienced by lakes and ponds have not significantly changed over the last 70 years or so, with poor water quality (including increased nutrient loads of nitrogen and phosphorous), under-management for habitats and over-management in regards 'tidying', INNS and a loss of ponds in general, all reduced the variety and suitability of ponds and lakes for wildlife, with commensurate declines in diversity and abundance of flora and fauna.

In 2016, a new pond (c.160m²) was created at Queen Mary's Woodland, whilst the ponds at Mayflower Park have matured and provide habitat for breeding reed warbler and reed bunting.

3.2.3 Reedbed

As noted above, new reedbed is being created as part of the restoration of Beddington Farmlands. Once established, this will be the largest block within Sutton and will require specialist management to create the structural diversity required to provide habitats for specialist invertebrates, reedbed birds and possibly, over-wintering bittern.

The reedbed at Anton Crescent Wetland expanded within 2016, due to the removal of willow carr from the site, although in 2017, the reedbed was also removed, as the Environment Agency desilted the pond, to improve storage capacity in flood conditions. The desilted area was reprofiled in areas to try to create 'splashy' areas to be used by overwintering waders

like snipe and green sandpiper and the reedbed will be allowed to grow back but will require replanting. This will create, in the longer run, a wetter reedbed, which will, hopefully, improve the chances of species like reed warbler breeding on site.

3.2.4 Wet grassland

As noted in 2.4 above, wet grassland has undergone significant declines over the years, with commensurate losses in flora and fauna associated with this habitat type.

The wet grassland at Beddington Park will continue to be managed sensitively, hopefully utilising heavy horses and ambitions to expand or create new wet grassland at Beddington Park will be pursued.

Works are ongoing at Kimpton Balancing Pond to increase species richness and restoration of Back Green by the Beverley Brook will also be pursued.

Works at Sutton Common Paddock will involve the eradication of around 1ha of the grass species creeping bent and seeding with wildflowers and fine grasses.

The first stage in wet grassland creation at Beddington Farmlands is due to be completed in 2019, aiming to create about 3ha of suitable topography (seasonally wet grassland with numerous ditches, providing habitat and protection for ground nesting birds from foxes), which will then be seeded with fine grasses and wildflowers suitable for the conditions. Later tranches of wet grassland creation will be undertaken over the next few years, to the north of the pylons (which define the northern boundary of the initial area) and around the Energy Reclamation Facility (ERF) to the east of the site, all to be completed by the end of 2023.

3.2.5 SuDS

The use of SuDS has increased over the last few years but many of these use attenuation tanks under the development, which do not provide any biodiversity value. No large (>0.1ha) SuDS schemes have been undertaken since Kimpton Balancing Pond in 2006.

However, small scale SuDS, utilising rain gardens and planters, are being delivered through the SuDS in Sutton's Schools project¹⁸, which included a demonstration rain garden at the LBS offices in Carshalton¹⁹.

4. Specific Factors Affecting the Habitat Action Plan

4.1 Major factors

- Abstraction, leading to low flow levels / lower groundwater levels
- Delivery of Biodiversity Net Gain through river restoration
- Invasive species, leading to loss of native species and habitats
- Pollution
- Damage to riparian species and habitats by weed-cutting and bank clearance
- Impact of pressure of development leading to habitat loss, including desires to have paths along both banks
- Historical modification of the river course leading to reduction in diversity of physical habitat features of value to wildlife
- Removal of in-channel debris, reducing channel 'roughness' and leading to more rapid through flow of water, leading to increased chances of flooding
- Flood control measures

¹⁸ <https://www.southeastrivertrust.org/suds-installed-in-sutton-schools/>

¹⁹ <https://www.southeastrivertrust.org/first-rain-garden-complete/>

- Urbanisation and associated increase in hard surfaces leading to high runoff rates, flashy flows and influxes of associated pollutants.

4.2 Supplementary factors

- Increased sediment build up as overland flow strips soil (more of an issue in rural areas where good soil management is not undertaken)
- Loss of current-loving species and equally, lack of slack water for fish spawning
- Disturbance of species
- Rubbish deposition and accumulation
- Development within the floodplain
- Successional processes

It is clear that many of the major and supplementary factors affecting rivers, streams and wetlands do not occur in isolation; fragmentation and isolation of sites, pressure for development and reduction in landscape scale genetics are all intimately linked, for instance.

5. Current Action

5.1 Legal Status

The overarching driver for river restoration is what is known as the Water Framework Directive (WFD)²⁰ (technically: Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy). This aims to provide, in summation, an integrated river basin management system for Europe, crossing, if necessary, national boundaries. Key objectives for the WFD include ecological protection, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water. Not all objectives will apply to all water bodies but ecological protection is mandatory: *'the central requirement of the Treaty is that the environment be protected to a high level in its entirety.'*²¹ The UK government therefore has a responsibility, under the Directive, to achieve the targets set.

There are numerous river and wetlands habitat action plans, statements and many species action plans relevant to wetland habitats, which used to be contained within the UK Biodiversity Action Plan. The UK BAP was effectively succeeded by the 'Post 2010 Biodiversity Framework'²², with the individual HAP and SAPs (Species Action Plans) being effectively 'mothballed'. They *'remain, however, important and valuable reference sources. Notably, they have been used to help draw up statutory lists of priority species and habitats'*²³, as required under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006.

In this guise, rivers and some wetland habitats (ponds, reedbeds, coastal and floodplain grazing marsh etc.) are termed Priority Habitats. Numerous species strongly or solely associated with rivers and wetlands are also Section 41 Priority Species and some have legal protection through the Wildlife and Countryside Act (WCA) (1981, as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended).

²⁰ http://ec.europa.eu/environment/water/water-framework/index_en.html

²¹ http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm

²² http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

²³ <http://jncc.defra.gov.uk/page-5705>

Protected and priority species include bats (all species), great crested newt, common toad, yellow wagtail, bittern and lapwing.

There are a number of statutory designated Local Nature Reserves (LNRs) and non-statutory designated Sites of Importance for Nature Conservation (SINCs) within Sutton, which have a river or wetland component. Statutory protection has been applied at five Local Nature Reserves with wetland elements within the Borough: at Wandle Valley Wetland, Sutton Ecology Centre, Spencer Road Wetland, Anton Crescent Wetland and Wilderness Island.

In addition, Sutton has afforded strong protection to rivers and wetlands against the adverse effects of built development, through non-statutory nature conservation designations, including Sites of Metropolitan Importance (the River Wandle) and Borough Importance (Anton Crescent Wetland, Caraway Place pond, Beddington Park etc.) through the Local Plan.

Sutton has secured further protection and significant enhancement of sites for wetland conservation, through formal management agreements at key sites, such as the former Worcester Park Sewage Treatment works, Beddington Farmlands and Anton Crescent Wetland.

The Environment Agency exercises a pollution control function over watercourses in the UK.

5.2 Mechanisms targeting the Habitat Action Plan

5.2.1 Catchment Management Plans

Future implications for water resources require a holistic approach to catchment management, with land use practices that reduce rapid runoff and peak flood flows, enhance aquifer recharge and restore the natural function and connectivity of rivers and their floodplains. The Water Framework Directive required all inland and coastal waters to reach "good status" by 2015. The UK fell short of this target.

Catchment plans for the River Wandle²⁴ has been created and is being actioned, whilst a catchment plan for the Beverley Brook will be produced in the life of this Strategy.

5.2.2 Historical and Current Management

A considerable amount of management is carried out by individuals, committed voluntary and non-statutory organisations, often in partnership with Sutton Council. This enhancement work, including regular litter clearances along the Wandle, reed cutting, removal of vegetation to maintain areas of open water, silt removal and re-profiling of banks, has contributed greatly to the maintenance and enhancement of these natural habitats. Within the Borough, practical river and wetland management is carried out at a number of sites, including Anton Crescent Wetland, Caraway Place Pond, Kimpton Balancing Pond, Sutton Ecology Centre and Wandle Valley Wetland by the Biodiversity Team and the SNCV, whilst Wilderness Island and Spencer Road Wetland are managed by the London Wildlife Trust (under lease agreement and under licence, respectively).

²⁴ [Wandle Catchment Plan](#)

The wetlands at Mayflower Park are under a management agreement with the site’s contractors, whilst Beddington Farmlands has planning conditions to fulfil to create and enhance the river and wetland habitats on site or to be created as part of the restoration.

The Wandle Trust / South East Rivers Trust undertake river clean up events, removing dumped materials, as well as restoration and management on the Wandle, Beverley Brook and Pyl Brook.

5.2.3 Higher Level Stewardship

HLS includes targets for open water (HQ2) and reedbed management (HQ3). Both of these are based at Anton Crescent Wetland

5.2.4 Environment Strategy

One Planet Sutton (OPS) is now superseded by Sutton’s Environment Strategy, with the previous OPS targets being transposed to this HAP (7.1.1 below).

The Environment Strategy²⁵ contains actions on reducing water usage and SuDS.

5.2.5 Resource Availability

Although the HLS scheme runs until 2023 and the Government has promised to maintain all agri-environmental payments post-exit of the EU, there is no guarantee that HLS or a new scheme will provide the necessary monies to continue to manage these sites.

One of the aspirations of this Biodiversity Strategy is to utilise compensation monies delivered through Biodiversity Accounting to deliver the restoration, creation and enhancement of rivers and wetlands within Sutton but this is at an early stage and requires further resource input.

6. Priority Species

These species are indicators of higher quality environments and, often, highly distinctive and recognisable, for even the untrained.

Common Name	Latin	Brief Description
Brown trout	<i>Salmo trutta</i>	A distinctive light brown fish with silvery sides and pronounced black spots on the back. An indicator species of the unpolluted nature of the River Wandle.
Grey wagtail	<i>Motacilla cinerea</i>	Often seen along the Wandle and more colourful than its name suggests, with a distinctive yellow breast and under-tail
Water-cress	<i>Nasturtium aquaticum</i>	A native species, watercress was grown commercially alongside the Wandle well into the last century. It provides substantial habitat along the river edge for invertebrates and young fish

²⁵ [Environment Strategy](#)

Kingfisher	<i>Alcedo atthis</i>	Historical population declines seriously affected kingfishers throughout urban areas but populations are now recovering. Any impact on water quality which affects fish numbers, as well as removing soft earth banks negatively impacts this iconic species.
Water vole	<i>Arvicola amphibius</i>	The water vole is unlikely to be present anywhere on the River Wandle or other streams or wetlands within Sutton. A long-standing ambition for several organisations seeks to reintroduce this charismatic mammal to selected restored sites.
Stream water-crowfoot	<i>Ranunculus penicillatus</i> ssp. <i>pseudofluitans</i>	An important and characteristic in-channel species, providing oxygen, submerged habitat and, in flower, nectar and pollen sources
Demaiselles	<i>Calopteryx splendens</i> & <i>C. virgo</i>	Iridescent bluey greeny males and green females, these large damselflies are characteristic of quick flowing streams with plenty of bankside vegetation. Numbers appear to be increasing.

7.0 Objectives and Actions

The London Borough Sutton contains the River Wandle, Pyl Brook and Beverley Brook, as well as other wetland habitats.

This Action plan aims:

- To maintain and enhance rivers and streams for biodiversity throughout the Borough, through implementing the Catchment Plans for the River Wandle and Beverley Brook, to naturalise river channels and processes
- To maintain and enhance existing areas of wetlands for biodiversity through implementing good practice and completing Higher Level Stewardship targets
- To monitor rivers and wetlands to evaluate their ecological status
- To promote the importance of rivers and wetlands for biodiversity and low impact recreation and relaxation
- To implement and increase the number of functional SUDs schemes

Rationale:

The River Wandle, Beverley Brook and Pyk Brook are three of only 200 worldwide chalk streams and the Wandle is, arguably, the main chalk stream in London. Sutton has a duty of care to manage and enhance this scarce and threatened habitat.

Within Sutton, the Wandle is a Site of Metropolitan Importance (SMI) along its length. There are numerous restrictions to fish passage, natural processes and appropriate natural habitat, whilst pollution, misconceptions and surface run-off add to the issues affecting the Wandle (and other waterways). Along the Wandle within Sutton, three sites are designated Local Nature Reserves (Wilderness Island, Wandle Valley Wetland and Spencer Road Wetland) and the Wandle runs through Beddington Park (Borough Grade II SINC and Beddington Farmlands SMI).

Several intervention projects have recently been completed, including works at Hackbridge White Bridge, by Three-Arch Bridge and Mill Lane in Carshalton, naturalising the river banks, improving in-river processes and increasing biodiversity through appropriate planting. Further works at Durand Close, Corbet Close and Goat Bridge are imminent or underway but to fulfil the long term target (7.1.1) that all waterways in Sutton are passable for fish by 2050, significant further works need to be undertaken, removing weirs and creating appropriate habitat.

The provision of buffering effects through re-engineering the river channel and banks to affect flooding and water attenuation may have wider implications on mitigating some of the predicted effects of climate change and more extreme weather, through providing greater system resilience (Natural Flood Management) and / or habitat and niche availability.

The Water Framework Directive is a European integrated river basin management system, transposed into law, of which the UK has to comply. The UK had to meet environmental objectives by 2015, which, according to Environment Agency figures, had not been met²⁶.

7.1 Habitat Targets

7.1.1 Long Term Target

- All waterways in Sutton (5.1km) passable for fish by 2050.

7.1.2 HLS Targets

HQ2 Ponds (>100m²) - Anton Crescent Wetland

Indicators of success

- There should be no obvious signs of pollution, such as a film of fuel oil, total cover with green algae or rubbish
- By year 3, undesirable species should cover less than 5%
- The combined cover of both submerged and floating aquatic plants, excluding undesirable species, should be between 25% and 75%
- Percentage cover of marginal vegetation (marginal and emergent species), should be between 25% and 100% in the period May to mid-September

HQ3 Reedbeds - Anton Crescent Wetland

Indicators of success

- The vegetation should include at least 60% Common Reed
- There should be at least 150 Common Reed stems per square metre within the area of dominant Reed
- Cover of scrub within the reedbed should be less than 10%.
- Cover of undesirable species non native invasives should be less than 5%
- The height of the Common Reed prior to cutting should be at least 100cm
- Between April and October, 50% to 95% of the reedbed should be covered by surface water, which should be between 10cm and 30cm deep. 5% and 10% of the area should be allowed to remain dry
- Between November and March, 50% to 95% of the reedbed should be covered by surface water, which should be between 10 and 30cm deep. 5% to 10% of the area should be allowed to remain dry
- Area of open water should be between 10% and 30% of the entire site

²⁶ [WFD figures](#)

7.2 Habitat Action Plan Targets:

7.2.1 Targets:

RW 1 For the River Wandle and Beverley Brook to Meet 'Good Ecological Potential' by 2025, as defined by the Water Framework Directive

RW 2 To improve the condition of rivers and wetlands for nature conservation.

RW 3 To promote the importance of rivers and wetlands in the Borough for biodiversity and the need for protection

RW 4 To promote habitat creation, restoration and water quality enhancement through the planning process as part of SUDS creation

7.2.2 Actions:

Code	Action	Lead
RW1	For the River Wandle and Beverley Brook to Meet 'Good Ecological Potential' by 2025, as defined by the Water Framework Directive	
RW 1.1	Implement the Catchment Plans for the River Wandle Target: Undertake scheduled works by 2025.	SERT
RW 1.2	Write Catchment Plan for Beverley Brook and Pyl Brook Target: Catchment Plan written and agreed by 2022	SERT
RW 1.3	Investigate restoration opportunities for the Beverley Brook and Pyl Brook within Sutton Target: List of potential projects created by 2023	SERT / SBO / Parks
RW 1.4	Implement the Wandle INNS Action Plan ²⁷ Target: Agree a schedule of works with the WLBG	SERT / SBO / Parks / WLBG
RW 1.5	To implement Local Plan Policy 26 on protecting and enhancing sites, through the delivery of the Biodiversity Strategy and assessment of planning applications that may impact on designated sites.	Senior Biodiversity Officer
RW2	To improve the condition of rivers and wetlands for nature conservation. Target: Maintain area and enhance the quality of all rivers and wetlands in the borough	
RW 2.1	Ensure that river and wetland SINCs managed by the Biodiversity Team have up-to-date Management Plans in place by 2020. Target: 6 sites ²⁸	Senior Biodiversity Officer

²⁷ To include Himalayan Balsam, *Crassula helmsii*, Japanese Knotweed and floating pennywort at specific locations

²⁸ Anton Crescent Wetland; Caraway Place; Carew Manor Wetland; Kimpton Balancing Pond; Wandle Edge, Wandle Valley Wetland

RW 2.2	Undertake Phase 1 and condition assessment botanical surveys of river and wetland SINCs Target: 6 sites (as above for RW 2.1)	Senior Biodiversity Officer
RW 2.3	Undertake and fulfil, by 2023, Higher Level Stewardship targets and prescriptions at Anton Crescent Wetland. Target: reached targets as outlined in HLS agreement for the open water and reedbed	Senior Biodiversity Officer
RW 2.4	Contribute to the Implementation of the 'No Deterioration Plan' for the Carshalton Arm of the Wandle Target: Ensure the Carshalton Arm of the Wandle maintains Good Ecological Potential and does not deteriorate	Environment Agency / SERT / SES Water / Parks
RW 2.5	Maintain and enhance the lake and stock pond at Beddington Park Targets: 1) monitor and restock, as necessary, aquatic plants in the stock pond; 2) create valuable aquatic and riparian wildlife habitat in the lake through aquatic planting and floating 'bio-islands'.	Volunteer Coordinator Officer / Senior Biodiversity Officer
RW 2.6	Investigate and, if possible, undertake restoration and improvement works at Richmond Green and Wandle Bank by 2025. Target: secure fish passage, restore natural processes and create valuable aquatic and riparian wildlife habitat.	Wandle Trust / Senior Biodiversity Officer
RW 2.7	Cooperate with all necessary parties to investigate and, if possible, undertake restoration and improvement works at Shepley Mill by 2025. Target: secure fish passage, restore natural processes and create valuable aquatic and riparian wildlife habitat.	Wandle Trust / Developers / Senior Biodiversity Officer
RW 2.8	Monitor and advise on the fulfillment of restoration and improvement works at Durand Close by 2021. Target: restore natural processes and create valuable aquatic and riparian wildlife habitat.	Planning Enforcement / Senior Biodiversity Officer
RW 2.9	Monitor and advise on the fulfillment of restoration and improvement works at Corbet Close by 2021. Target: secure fish passage, restore natural processes and create valuable aquatic and riparian wildlife habitat.	Planning Enforcement / Senior Biodiversity Officer
RW 2.10	Contribute to undertaking restoration and improvement works at upstream of Goat Bridge by 2025. Target: secure fish passage, restore natural processes and create valuable aquatic and riparian wildlife habitat.	SERT / Environment Agency / Thames Water / Parks
RW 2.11	Investigate the possibility of increasing biodiversity around Carshalton Ponds, should desilting works be proposed.	Parks Team / Senior Biodiversity

	Target: Increase marginal vegetation by at least 200%, provide floating and aquatic species to the water column, install floating islands of native vegetation	Officer
RW 2.12	Undertake works at Sutton Common Paddock to improve this area as lowland wet grassland and fulfil Higher Level Stewardship targets by 2023. Target: 1ha of amenity grassland restored to species rich grassland by 2023	Senior Biodiversity Officer
RW 2.13	Monitor and advise on the fulfillment of restoration and enhancement work at Wandle Trading Estate to recreate Mill Pond and provide enhancements to Mill Green Stream and the east bank of the Wandle, in line with submitted Condition details by 2020 Target: create valuable aquatic and riparian wildlife habitat.	Planning Enforcement / Senior Biodiversity Officer
RW 2.14	Monitor and advise on the habitat restoration and limited public access at Beddington Farmlands, such that it proceeds as per the RMP v9.1, including reedbed, lowland wet grassland and wet woodland. Target: Each habitat parcel within the RMP restored in full by 2023	CAMC / Senior Biodiversity Officer / Planning Enforcement
RW3	To promote the importance of rivers and wetlands in the Borough for biodiversity and the need for protection	
RW 3.1	Carry out monthly riverfly monitoring at 6 sites (Poulter Park, Beddington Park, Goat Bridge and 3-Arch Bridge; Restmor Way and Hackbridge). Target: 50 surveys per annum.	SERT/ Senior Biodiversity Officer
RW 3.2	Promote the value of rivers & wetlands for wildlife through talks, guided walks, practical volunteering opportunities, events and social media. Target: Run 30 events and promote 18 citizen science surveys to raise awareness of river and wetland habitats by 2025.	SERT / Senior Biodiversity Officer / Volunteer Coordinator Officer
RW4	To promote habitat creation, restoration and water quality enhancement through the planning process as part of SUDS creation	
RW 4.1	To promote habitat creation, restoration and water quality enhancement through the planning process by incorporating SuDS into design. Target: 10 functional SUDS by 2025.	LLFA Officer / SERT

Appendix B4: Parks & Green Spaces

Habitat Action Plan 2019 – 2024



Lady's smock at Beddington Park wet meadow (© D. Warburton)

1. Aims

- To diversify and increase the extent and quality of wildlife habitats within Parks and Green Spaces, including churchyards and allotments
- To implement good conservation practice to enhance parks and green spaces for nature
- To raise awareness of the importance of Parks and Green Spaces in the conservation of Sutton's biodiversity.

2. Introduction

This is a 'catch-all' plan for those aspects of nature that might otherwise fall between the gaps of more strictly defined Habitat Action Plans, although there is, inevitably, some crossover in targets.

This habitat action plan covers varying habitats including grasslands, wetlands, scrub and amenity grasslands. They mostly have high levels of public usage as the plan covers parks, cemeteries and churchyards, local nature reserves and allotments; anywhere where the public is normally or permissively allowed to go to experience 'the outdoors'.

Most parkland has gone through a series of transformations over many centuries to establish what we know as a park today and they can offer a wide range of breeding, foraging and refuge opportunities for wildlife. Churchyards are a relatively minor resource in terms of land cover but within large cities, such as London, cemeteries can be of significant importance as links in green chains, providing relatively undisturbed areas for wildlife.

3. Current Status

3.1 Area & Distribution

Sutton currently has 518ha of open space, although GiGL data²⁹ states that 397.87ha are composed of amenity grassland, as part of the comprehensive survey of the borough. Compared with other habitats within this Biodiversity Strategy, (woodland & scrub, rivers and wetlands, chalk grassland etc.), amenity grassland covers more than 2.5 times the land areas of all of those other habitats, combined. Amenity grassland is very poor for biodiversity.

Sutton has over 90 parks and open spaces plus 37 allotment sites and 8 cemeteries and churchyards.

With regard to parks and green spaces with some consideration for nature conservation and ecology, 14 have been designated as a Site of Importance for Nature Conservation (SINC). In addition, 5 churchyards are designated (or included within a wider site designation) as SINCS.

A number of Sutton's parks have strong ecological components, such as the chalk grassland meadow and replanted woodland at Oaks Park or the chalk river, wet grassland, wetland and woodland features at Beddington Park, which provides an amount of high quality wildlife habitat, with some species scarce within London.

²⁹ GiGL, 2006

Parkland and green spaces are present throughout the Borough, although they vary markedly in ecological quality, as well as public accessibility and social interaction (i.e. 'Friends of' groups). Most parks and green spaces often, as a bare minimum, provide some nectar, berries and pollen opportunities, as well as some nesting opportunities in dense shrubs and mature trees, even if these are not composed of native species.

3.2 Trends

Much of Sutton's parkland was formerly part of large aristocratic estates, traditionally managed for deer or other grazing, such as Beddington Park and Oaks Park. The areas of these estates has been reduced over the centuries, with some features becoming dilapidated or disappearing, whilst natural succession has occurred on some areas, altering the habitats / features markedly, sometimes detrimentally.

These days, typical parks are mainly composed of short-mown amenity grass and ornamental trees with shrub beds, such as The Grove and Manor Park. There has been a mild shift away from these high maintenance landscapes over the last 20+ years, which has created some additional opportunities for wildlife in parklands, as management input and maintenance costs for nature conservation are relatively low, although restoration costs can be moderate to high. When undertaken with sympathy and understanding, we can create, or allow to revert, areas within parkland that are much more suitable for local wildlife and natural processes.

There are four broad approaches that are applicable to parkland management for the benefit of wildlife. These are:

- i) *Habitat Restoration*; trying to re-establish the species / habitats which might have occupied the site in the past
- ii) *Habitat Creation*; creating new wildlife landscapes for species that are suited to the environmental conditions that exist on the site
- iii) *Naturalistic vegetation*; in essence attempts to replicate the structure of natural plant communities, but does not have to use exclusively native species.
- iv) *'Letting go'*; allowing natural succession to occur, which may then be controlled by some form of management such as grazing, mowing, felling etc. This very much depends on the starting conditions; much of modern parkland is so depauperate in species that what may form from 'letting go' is of little value and requires habitat restoration work.

The majority of vegetation in parks is comprised of non-native species in shrub beds with varying numbers of introduced tree species, species poor amenity grassland and often, some neglected areas around the 'back' or edges of the park that are species poor stands of ruderal species (brambles, docks, thistles, nettles etc.).

Formal landscaping can have *some* wildlife value. These are areas where the flora may be almost entirely non-native but may (depending on the species and structure) provide some shelter, breeding opportunities or foraging opportunities. Ornamental shrub beds may be visited by berry-feeding birds like blackbirds or other thrushes, whilst mature non-native

trees can provide opportunities for woodpeckers and nuthatch. Football / sports pitches can be useful, particularly over the winter months for gull species, like black-headed gull, herring gull and common gull and wintering thrushes, such as fieldfare, seeking grubs and other invertebrates in the soil, disturbed through football boots.

Parks often have a good number of old and sometimes, veteran(ised), trees and these are of high biodiversity value. Old(er) trees provide important opportunities for lichen and fungal species, as well as nesting or roosting opportunities for birds and bats. Some species of butterfly live in the canopy of mature trees, particularly native oaks and ash trees, feeding on the sugary 'honeydew' of aphids.

Edge habitats are often at a premium in parks and publicly accessible green spaces; the close mown amenity grassland is often right up to the woodland / scrub edge, reducing the availability of taller grasses and plants to grade into the shorter amenity grassland. These habitat transition areas (short growth into tall) are 'ecotones' and of high value, as they provide a wide variety of microclimatic and species diversity. Within these transitional areas, one would expect to find common amphibians, like frogs and toads and, maybe, reptiles such as slow worm or common lizard, small mammals like hedgehogs or woodmice and a whole variety of invertebrates. Leaving 'buffer strips' uncut is one of the easiest ways to increase whole site biodiversity (i.e. point iv 'Letting go' above).

Where there are water bodies, such as ponds and lakes, the usual assortment of wildfowl can be found, including Canada geese, mallards, moorhen and coot. Other species of 'more interest' may include little grebe, grey heron, kingfisher or tufted duck.

Where the water quality is reasonable to good in ponds, lakes and rivers **and** where marginal and submerged vegetation is allowed to grow, dragonflies and damselflies may be found, such as southern hawkler, migrant hawkler and blue-tailed damselfly. Various other invertebrates with aquatic larval stages may also proliferate, providing food for larger predatory invertebrates, fish, birds and bats.

Allotments may have areas left aside deliberately for wildlife, or may create them by accident, such as fallen fruit, compost piles, small ponds etc. Because each allotment owner may have very different ideas on what their allotment is for and the balance they take between wildlife and food cultivation, it is very difficult to make any overall assessment of how beneficial to wildlife allotments actually may be. The variation on a very small scale (between each allotment plot) can be huge.

Churchyards and cemeteries may have undisturbed areas that contain relict habitats (such as veteran trees, hedgerows and semi-improved grassland etc. **Figure 5**), as well as more formal and ornamental planting. Management intensity can vary enormously, from areas being left as non-intervention, to close cropped grass between graves, or from graves being overrun with vegetation to pristine headstones. The general lack of disturbance by visitors means that cemeteries and churchyards can provide havens for common species to breed and increase population numbers that are depleted at other sites, known as *population sinks*.

Population sinks are where the habitat is just suitable for a species to exist in that area but is not suitable enough for a self-sustaining population. The continued existence of the species in this area can only be maintained by a continued influx of new individuals from external

donor populations but the overall trend is that of continuing loss to the wider population of that species. Individuals from a stable donor population move to a 'new' area to start a new population but that population becomes extinct after X number of years. Sometime later, a new set of individuals from the same donor population may recolonise the site but again, become extinct. Rather than growing the wider population by finding new sites on which to thrive (i.e become donor populations in turn), the site may just continually act as a trap to individuals.

In more natural systems, these fluctuating populations are maintained by a number of healthy donor populations dotted about the landscape. With our highly modified landscapes, particularly in the urban and peri-urban setting, there may only be one site that can act as a donor population, all other sites acting as population sinks. The numbers of individuals of that species can, therefore, never increase beyond what the donor site can maintain.

In the urban landscape, we face a very real danger of having sites that are population sinks and detrimental to the overall population of many species. The only ways to combat this effect are to increase the quality of all spaces for nature and to increase the total area of habitat availability, through the restoration of meadows, wetlands and woodlands.

Figure 5 - meadow saxifrage in its only wild location in Sutton, Bandon Hill Cemetery (© D. Warburton)



4. Specific Factors Affecting the Habitat Action Plan

4.1 Major Factors

- Negative public response of 'untidy' appearance of natural areas
- Delivery of Biodiversity Net Gain
- Financial constraints on parks / accessible area management
- Inappropriate management or neglect
- Conflicting recreational & social pressures
- Health & safety requirements of unsafe trees, water bodies etc.
- Loss of deadwood habitats
- Skills and desires of staff - often linked to constraints of contract specification or job role / wider policies

4.2 Supplementary Factors

- History of low intensity management in churchyards
- Increasing recognition of biodiversity value of parks
- Voluntary sector involvement, including 'Friends of' groups
- Damaging pesticide & herbicide usage
- Invasion of aggressive non-native species
- Disturbance to wildlife by dogs & enrichment by their faeces & urine
- Atmospheric nitrogen enrichment, particularly to water bodies
- Vandalism, illegal dumping & litter

Obviously, these are some, but not all, of the positive and negative factors that parks may face; some parks may have very few of these factors, others may be blighted or enhanced by issues not on this list.

5. Current Action

5.1 Legal Status

Many parks and green spaces are designated as SINCs; some have listed historic park protection, or Metropolitan Open Land and Greenbelt designations. They are thus protected by planning designations and policies contained in the Local Plan.

The caveat is that, although many of the sites in Sutton have planning designations as Sites of Importance for Nature Conservation, the management of the site is not always in line with why the site was designated. A wholesale reevaluation of the management of parks and green spaces would be required to manage each designated site in line with its citation, to provide greater biodiversity value, which is highly likely to be outside the scope and influence of this plan.

Certain trees and hedgerows within parks and green spaces are protected by Tree Preservation Orders but there are very few, if any, within parks.

Current statutory legislation provides protection to breeding birds, reptiles and amphibians (with varying levels of protection), stag beetle (deadwood habitats) and all bats species, including their roosts.

Although it does not confer legal status, Wood Pasture and Parkland were a priority habitat under the UK Biodiversity Habitat Action Plan and remains a Priority Habitat under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006.

5.2 Mechanisms targeting the habitat

5.2.1 Historical Management

Most management within Sutton Parks and Green Spaces has been amenity focussed, whether repeated cutting of amenity grassland or for health and safety or 'tidying' reasons.

Sutton Council maintains some semi-natural areas for nature conservation within parks, such as the chalk grassland meadow at Oaks Park. However, this area is effectively in a very slow decline or, at best, stable, as the management has not changed sufficiently to improve the state of this area. It is likely that a significant change in management is required to improve this area, to meet Higher Level Stewardship targets.

Natural plant communities probably survive within urban parks in Sutton to a greater extent than in boroughs in central London. These are, obviously, a priority for protection. In some cases this interest may be latent e.g. where wild flowers get mown before they have a chance to flower. This has been demonstrated by leaving a wildflower meadow to regenerate on former amenity grassland at Oaks Park. Releasing further amenity grassland from repeated mowing at the Oaks would provide more 'chalk grassland' but future management would be a key issue and grazing would be essential.

However, large areas of grassland within parks are cut for amenity use with little consideration for biodiversity. These areas are maintained using public money and are often under intense public scrutiny. If they are left to grow, they are likely to be a species poor habitat (as more delicate species have been lost and replaced with more tolerant, highly competitive species) and there is often the perception taller grass areas are unmanaged and of less value.

Some 'Friends of' groups actively manage, and lobby for, 'wildlife areas' in their parks, although these can sometimes be at odds with what may be of particular value i.e. pictorial meadows are now fairly regular features within many parks but of limited biodiversity value, whereas a more natural meadow or sunny bramble edge, for instance, may be of greater value but underappreciated or removed for something 'more acceptable'.

Some deadwood habitats are left to decay in many parks, where this does not conflict with health and safety requirements but the amount within woodlands in parks is still low.

Pollinating insects may move between wild and formal areas e.g. butterflies feeding on planted lavender beds. Creating meadow areas can therefore enhance the biodiversity contribution of ornamental areas. A holistic approach is therefore preferred, rather than seeing biodiversity as something only for, and contained within, 'wildlife areas'.

Future benefits for biodiversity in parks require an integrated approach to management, balancing natural or naturalistic plant communities with areas of more formal landscaping, whilst also catering for recreational and social requirements. It is important to recognise the contribution formal areas can make (particularly for birds) and look for ways to maximise this

value that are compatible with their primary role, whilst also recognising that vast areas of parkland can often be very restricted in habitat and species diversity.

5.2.2 Higher Level Stewardship

In December 2013, the London Borough of Sutton agreed a 10 year agri-environment scheme (Higher Level Stewardship - HLS) with Natural England. Within this Habitat Action Plan, HLS agreements relate to two neutral meadows and the provision of a sacrificial crop for birds (see 7.1.1 below). The targets set by HLS are therefore of utmost importance for the London Borough of Sutton and influence the aims and objectives of this HAP.

The sacrificial crop is reset annually after the 15th March each year with a specific seed mix of value to seed eating birds.

6. Priority Species

These species are indicators of higher quality environments and, often, highly distinctive and recognisable for even the untrained.

Common Name	Latin	Brief Description
Veteran(ised) trees	<i>Various species</i>	Provide important landscape and aesthetic values, as well as habitat. Includes the sweet chestnuts in Carshalton Park, hornbeams at Cuddington Rec. and the London Plane at Sutton Ecology Centre.
Corky-fruited water-dropwort	<i>Oenanthe pimpinelloides</i>	Only occurring in the meadow at Cuddington Rec., this species is an indicator of older meadows and grasslands on clay
Water pepper	<i>Polygonum hydropiper</i>	Extremely rare in the borough, restricted to one muddy puddle in Beddington Park. Has a very sharp, acrid taste to the leaves
Yellow rattle	<i>Rhinanthus minor</i>	A hemiparasite of grasses and clovers, this annual is also known as hay rattle and 'the meadow-maker', as it reduces grass vigour, allowing wildflowers to flourish at the expense of the grasses. Often integral to habitat restoration or creation projects and great for bumblebees!
Small copper	<i>Lycaena phlaeas</i>	This beautiful dark brown and amber butterfly can be found wherever species rich semi-natural grasslands occur that provide the larval host plants, common sorrel and sheep's sorrel
Spleenworts	<i>Aspleniaceae</i> spp.	Old buildings and walls support these small fern-like plants growing in crevices and joints between the stones.
Lichens	for example <i>Caloplaca decipiens</i>	Lichens are a combination of two organisms, a fungus and an alga, living together. Churches and Churchyards are important for lichen conservation, particularly where there are no natural exposed rock surfaces but many species also grow on trees. Lichens are important air quality indicators

7. Objectives and Actions

Rationale:

Sutton has over 90 parks and green spaces, many are publicly accessible but significant amounts of amenity grassland. Improvements to habitats within parks and green spaces, including the removal of some amenity grassland, will be sought through Biodiversity Accounting.

The aim of this action plan is:

- To diversify and increase the extent and quality of wildlife habitats within Parks and Green Spaces
- To implement good conservation practice to enhance parks and green spaces for nature
- To raise awareness of the importance of parks and green spaces in the conservation of Sutton's biodiversity.
- To create new areas of wildlife habitat within Parks and Green Spaces

7.1 Habitat Targets

7.1.1 HLS Targets

HK16 Restoration of Grassland for Target Features: Belmont Pastures and Sutton Common Paddock. Total size: 2.25ha

- Year 5: have 2 indicator species with occasional abundance at each site (as judged through G06 surveys)
- Year 10: have 2 indicator species with frequent abundance at each parcel and 2 occasional (as judged through G04 surveys)

HF12NR Enhanced wild bird seed mix plots (non rotational): Beddington Park. Total size 0.5ha

- At full crop establishment, there should be between 75% and 100% cover of sown species
- At full crop establishment, cover of bare ground should be between 5% and 25% of the plot
- At full crop establishment, there should be no more than 5% cover of undesirable species
- The plots should provide sustained seed supply throughout the winter until 15 March
- The target bird species: Tree Sparrow should use the plots regularly

7.2 Habitat Action Plan Targets:

7.2.1 Targets:

- | | |
|------|--|
| PGS1 | To maintain the extent & current management and implement enhancements to meadows and species rich grassland |
| PGS2 | To promote the importance of Parks and Green Spaces for biodiversity in the borough |

PGS3 To enhance and diversify the wildlife habitat in Parks and Green Spaces, in line with their SINC designations.

PGS4 To create new areas of wildlife habitat within Parks and Green Spaces

7.2.2 Actions:

Code	Action	Lead
PGS1	To maintain the extent, current management & implement enhancement to existing meadows and species rich grassland	
PGS 1.1	To deliver the HLS HK16 target for Belmont Pasture Target: Site with up-to-date management plan, reflecting HLS targets and prescriptions and 2no. indicator species frequent and 2no. occasional by 2023.	Senior Biodiversity Officer
PGS 1.2	Existing wildflower meadows within Parks to have annual haycut to maintain extent and condition Target: 8 sites ³⁰ annually	Idverde / Senior Biodiversity Officer
PGS 1.3	To instigate and maintain a low impact management regime to enhance damp grassland sites utilising heavy horses or light machinery for hay cutting and removal Target: 4 sites ³¹ annually	Senior Biodiversity Officer / Idverde
PGS 1.4	Implement suitable habitat management, in line with Parks management plans and the SINC citation Target: Provide biodiversity input to 2 ³² site management plans by 2020 Target: Both sites with at least 25% of the grassland in flower at any one time between April and September annually from 2021	Idverde / Senior Biodiversity Officer / Parks Team
PGS 1.5	Undertake annual Phase 1 and condition surveys to ensure meadow quality is maintained and share data with GiGL Target: 4 sites annually (as per PGS 1.3)	Senior Biodiversity Officer
PGS 1.6	Undertake Phase 1 surveys every 5 years to ensure data relating to the SINC citation is up-to-date and share data with GiGL	Senior Biodiversity Officer

³⁰ Beddington Park - 'tall grass area' & wet meadow; Cheam Rec, Cuddington Rec; Perrett's Field House Sparrow area; Queen Mary's Park, Rosehill Park East & Sutton Common Paddock

³¹ Beddington Park - 'tall grass area' & wet meadow; Back Green & Sutton Common Paddock

³² Bandon Hill Cemetery & Cuddington Cemetery

	Target: 26 sites³³ by 2025	
PGS 1.7	To implement Local Plan Policy 26 on protecting and enhancing sites, through the delivery of the Biodiversity Strategy and assessment of planning applications that may impact on designated sites.	Senior Biodiversity Officer
PGS2	To promote the importance of Parks and Green Spaces for biodiversity in the borough	
PGS 2.1	Run events (such as a guided walk, talk or practical event) in any Parks or Green Space Target: 10 events by 2025	Senior Biodiversity Officer / Volunteer Coordination Officer / SNCV
PGS 2.2	To engage and train active volunteer Tree Wardens for Beddington Park to help survey and monitor trees as well as lead planting and young tree maintenance sessions Target: 10 wardens engaged by 2025	Volunteer Coordination Officer / Tree Wardens
PGS 2.3	To run at least 2 community tree planting events a year to develop and restore woodland areas in Beddington Park. Target: 4 events by 2021	Volunteer Coordination Officer / Tree wardens
PGS 2.4	Volunteer events to develop and improve areas of Beddington Park – e.g scrub clearance, habitat development, invasive species clearance, waterway and pond enhancements. Target: 4 events by 2021	Volunteer Coordination Officer
PGS 2.5	Design, create and install new interpretation boards explaining wildlife and / or habitats at SINCs Target: 3³⁴ boards by 2025	Parks Team / Senior Biodiversity Officer
PGS3	To maintain, enhance and diversify the wildlife habitat in Parks and Green Spaces, in line with their SINC designations	
PGS 3.1	Improve the northern woodland area at Beddington Park through selective thinning, underplanting and coppicing (links to Woodland and Scrub HAP) Target: 0.3 ha enhanced by 2021	Technical Services Manager / Volunteer Coordination

³³ All Saints Churchyard Benhill; Bandon Hill Cemetery; Beverley Brook; Buckland Way Rec; Caraway Place; Carshalton Park; Carshalton Ponds; Cheam Park; Cheam Rec; Cuddington Cemetery; Cuddington Rec; Dale Park; Greenshaw Woods & Rosehill Park East; Lambert's Copse; Little Woodcote Wood; London Road Edge; Mill Green; Perret's Field & Sutton Waterworks; Pine Walk; Poulter Park Riverside; Queen Mary's Park; Queen Elizabeth Walk; Revesby Road Woods; Radcliffe Gardens Woodland; St. Nicholas Churchyard; The Grove

³⁴ Cuddington Rec; Queen Mary's Park; Bandon Hill Cemetery

		Officer / Idverde
PGS 3.2	Maintain the sacrificial crop at Beddington Park to fulfil HLS objectives Target: 0.5ha correctly managed each year until 2023	Senior Biodiversity Officer / Idverde
PGS 3.3	Survey blackthorn at Queen Mary's Park for brown hairstreak and undertake scalloping, if suitable, for promotion of brown hairstreak habitat. Target: survey by 2020 Target (if suitable): 50% growth under 10 years old by 2024	Senior Biodiversity Officer
PGS 3.4	Increase pollen and nectar resource availability through native spring bulb and wildflower planting in appropriate areas of Beddington Park Target: 0.3ha by 2021	Volunteer Coordination Officer
PGS 3.5	Manage and maintain the community orchard. Target: 0.3 hectares managed by 2021	Volunteer Coordination Officer
PGS 3.6	Subject to consultation, expand existing wildflower meadows ³⁵ and hedgerows ³⁶ in parks and green spaces	Senior Biodiversity Officer / Idverde / Parks Team
PGS 3.7	Subject to consultation, enhance existing 'meadows' ³⁷ in parks and green spaces	Senior Biodiversity Officer / Idverde / Parks Team
PGS 3.8	Implement suitable habitat management, based on the site's management plan and SINC citation. Target: To ensure biodiversity inputs into the preparation of all Parks management plans (see Policy P1)	Senior Biodiversity Officer / Idverde / Parks Team
PGS4	To create new areas of wildlife habitat within Parks and Green Spaces	
PGS 4.1	Subject to consultation, create new wildflower meadows ³⁸ and hedgerows ³⁹ in parks and green spaces	Idverde / Senior Biodiversity Officer /

³⁵ Cuddington Rec, Perrett's Field, Queen Mary's Park, Stock Pond in Beddington Park, Rosehill Park West

³⁶ The Grove

³⁷ Poulter Park, Corrigan Recreation Ground

³⁸ Beddington Park, The Grove, Carshalton Park

³⁹ Roundshaw Open Space, Beddington Park, Carshalton Park

		Parks Team
PGS 4.2	Create new wet meadow in Beddington Park Target: 0.5ha by 2025	Senior Biodiversity Officer / Parks Team
PGS 4.3	Consult on new or extended grazing proposals. ⁴⁰	Senior Biodiversity Officer / Parks Team

⁴⁰ Oaks Park, Roundshaw Downs, Poulter Park, Kimpton Linear Park, Beddington Park

Appendix B5: Green Infrastructure & Biodiversity Net Gain

Habitat Action Plan 2019 – 2024



Eversheds, Wood Street - Hybrid sedum roof, with dead wood feature, looking to St. Paul's Cathedral (© D. Warburton)

"The greatest threat to our planet is the belief that someone else will save it." Robert Swan

1. Aims

- To promote the addition and management of Green Infrastructure within developments
- To provide a mechanism for the delivery of No Net Loss and Biodiversity Net Gain within Policy 26 - Biodiversity, of the Local Plan 2016-2031
- To quantify losses and gains of habitats through the planning process

2. Introduction

2.1. Biodiversity Net Gain

Biodiversity Net Gain (BNG) is a newly mandated approach to planning and development for all Local Planning Authorities, aiming to deliver quantifiable No Net Loss and Net Gain, preferably within each development but through, if necessary 'offsetting' in another location

2.1.1 Background

BNG utilises a metric based mechanism for attempting to quantify the 'biodiversity units' of a specified area of land. The UK metric was initially developed by DEFRA for the Biodiversity Offsetting Pilot in England⁴¹, running from 2012 to 2014.

As part of the Biodiversity Offsetting Pilot in England, six regions were chosen to trial the UK's first national attempt at biodiversity offsetting. Of these areas, only the Warwickshire, Coventry and Solihull sub-region made biodiversity offsetting mandatory and they have further refined the process to make it more specific to their locale, through developing a Biodiversity Impact Calculator.

Biodiversity Offsetting proposed that if there would be a net loss to biodiversity from development of a specific area and the loss could not be mitigated in full on-site, then off-site compensation should be utilised to provide comparable biodiversity outcomes.

Biodiversity Offsetting requires a significant amount of set up, to map 'opportunity areas', where new habitat could go and result in an improvement in the extent or quality of the existing ecological network.

The DEFRA metric used in the 2012-2014 pilot is a multiple-attribute metric, utilising 'habitat distinctiveness' and 'habitat condition' multiplied by habitat type area, to provide a baseline of 'biodiversity units', which can be compared across habitats or compared against future usage.

Metrics are surrogates for complete measurements of total biodiversity found within a specific area and are a tool that can be used to provide greater consideration of the biodiversity value of a given area.

Metrics can never provide full consideration of the biodiversity in any given area but can provide an indication of equivalency.

Sutton has modified the DEFRA habitat distinctiveness values, to attempt to make them more relevant to the borough and adopted Building a Sustainable Sutton: Technical

⁴¹ [DEFRA Technical Paper](#)

Guidance Note for Developers⁴² in June 2018, which sets out how BNG within Sutton will be implemented.

Work is currently underway on the DEFRA 2.0 metric. The London Borough of Sutton is beta-testing DEFRA 2.0 and may incorporate it into, or as, the adopted metric, if it is likely to provide better outcomes for nature conservation and enhancement.

2.1.2 Delivery

One of the major aims for BNG within the London Borough of Sutton is to cement within planning 'No Net Loss' to biodiversity through development and move, as far as possible, to providing quantifiable net gains.

Biodiversity Net Gain provides a framework for considering impacts in a consistent and transparent way.

The London Borough of Sutton will utilise Biodiversity Net Gain to maximise on-site mitigation and enhancement for biodiversity, where this provides the best outcomes for nature, including the connectivity of habitats.

However, given the ambitious short and long-term targets outlined in this Biodiversity Strategy, it may be better, ecologically, to accept some Net Loss, on some specific developments, to deliver wider improvements at the landscape scale.

The determination of each development will be on a case-by-case basis to decide on what the 'best ecological outcome' may be, which may be to deliver on site or, to fund a habitat creation or restoration project, as outlined within this Strategy.

Any Net Loss allowance will be based on robust consideration of the development and ecological connectivity by the Biodiversity Team. It is not 'a Licence to Trash' a site.

The deliberate and / or intentional degrading of a site, through vegetation clearance, neglect etc. to attempt to reduce the baseline units for a forthcoming planning application and circumvent the planning process, will necessitate the estimation of the baseline value of the site, prior to any degradation. This estimation will be based on the best available data.

Net Loss that cannot be accounted for on-site will invoke a compensation 'Tariff' (see 7.1). The Tariff will be stored as a commuted sum and then utilised by the Council's Biodiversity Team to deliver that Net Loss elsewhere, through the restoration, creation or enhancement of biodiversity within the borough, to fulfil goals within Local Plan Policy 26 or within this Biodiversity Strategy (as outlined under the various Habitat Action Plans).

2.1.3 Policy Compliance

Not Net Loss and Net Gain are provided for through the National Planning Policy Framework (2018):

- *'encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve environmental net gains - such as development that would enable new habitat creation...'* (para. 118a)

⁴² [Building a Sustainable Sutton](#)

- *'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'* (para. 170d, pg. 49)
- *'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'* (para. 174b, pg. 50)
- *'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvement in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity'* (para. 175d, pg. 51)

The London Borough of Sutton adopted its Local Plan 2016-2031 in February 2018. Policy 26 states:

- (a) 'Major new development should result in no net loss in biodiversity value, as assessed against the DEFRA Biodiversity Offsetting Metric, Environment Bank Biodiversity Impact Calculator or any metric which the Council subsequently adopts formally. New development should incorporate opportunities to enhance biodiversity, wherever possible'*
- (b) 'The council will grant permission for developments that create, conserve or enhance biodiversity and improve access to nature, subject to other policies in the plan. In particular, the council will support the creation of:*
 - (i) 1 hectare of new woodland.*
 - (ii) 2 hectares of new chalk grassland at suitable locations.*
 - (iii) Various habitat enhancements identified through the council's Biodiversity Action Plan and the Catchment Plans for the River Wandle and Beverley Brook.*
- (c) The council will not grant planning permission within or adjacent to a SINC where there would be a damaging impact on the nature conservation value or integrity of the site, unless:*
 - (i) the need for and the benefits of the development clearly outweigh the harm.*
 - (ii) where there are no reasonable alternative sites that would result in less harm.*
 - (iii) where development can demonstrate no net loss for biodiversity and, where possible, net gains for biodiversity by providing mitigation and/or compensation measures.'*

To determine and quantify the difference between mitigation for on-site development and what are actually enhancements to provide a net gain, the Biodiversity Accounting metric will be utilised for all developments that are judged by the Biodiversity Team to result in a net loss, or, could provide a quantifiable net gain.

This is further elaborated on in the Validation Checklist: Validation Information for Biodiversity⁴³.

2.1.4 National Compliance

Government policy on no net loss and net gains for biodiversity are laid out in The Natural Environment White Paper - *The Natural Choice: Securing the Value of Nature*⁴⁴, Making

⁴³ Add link to planning pages when up and running

⁴⁴ [The Natural Choice: Securing the Value of Nature](#)

*Space for Nature: A Review of England's Wildlife Sites and Ecological Network*⁴⁵ and the newly released *A Green Future: Our 25 Year Plan to Improve the Environment*⁴⁶.

Further, the construction industry and developers are also driving No Net Loss outcomes, as laid out in *Biodiversity Net Gain: Good Practice Principles for Development*⁴⁷.

In the Government's Spring Statement⁴⁸ (March 2019) it decreed that Biodiversity Net Gain (BNG) will be mandated to all Local Planning Authorities. Sutton will continue to feed into the discussions on how BNG will be implemented nationwide with Natural England, DEFRA and the GLA, for the forthcoming London Plan.

2.2 Green Infrastructure

Green Infrastructure (GI) is a term now widely applied to include any area or process that will contribute to Ecosystems Services integrated into spatial planning. GI aims to enhance nature's ability to deliver multiple valuable ecosystem goods and services, potentially providing a wide range of environmental, social, climate change adaptation and mitigation, and biodiversity benefits.

3. Current Status

3.1 Area & Distribution

It is not possible to quantify the area or distribution of Green Infrastructure within Sutton at the time of writing, as no mechanism for recording it has been utilised by the borough. Biodiversity Net Gain and the related Green Space Factor⁴⁹ are the proposed mechanisms for recording the type, quality and area of Green Infrastructure / habitat created through developments.

3.2 Sutton's Green Infrastructure

Green Infrastructure in Sutton comprises a variety of modified habitat types. The four main types are 'living roofs', 'green walls', soft landscaping and SuDS:

3.2.1 Living Roofs

Living roofs are known by a number of epithets. They can be 'sky gardens', 'green', 'brown' or even 'blue' roofs, depending on the proposed function.

Living roofs, however they are known, are categorised by the depth of substrate utilised and the vegetation cover the substrate will support. In order of substrate depth, these are *extensive systems*, *semi-intensive systems* and *intensive systems*.

- **Extensive systems** = shallow substrate: Generally, substrate depths are between 60 and 200mm, with weights of 60-150kg/m². Extensive systems are those that generally provide a greater biodiversity value and are composed of several subdivisions:
 - *Sedum roofs* - the commonest 'off-the-shelf' solution and often the cheapest. Sedum roofs are lightweight, with very shallow substrate (50-70mm) depths.

⁴⁵ [Making Space for Nature](#)

⁴⁶ [A Green Future](#)

⁴⁷ https://www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf

⁴⁸ <https://www.gov.uk/government/news/spring-statement-2019-what-you-need-to-know>

⁴⁹ [Building a Sustainable Sutton](#)

Sedum species are wind and drought resistant and provide a 'green carpet' but provide very little value for local biodiversity.

- *Hybrid sedum* - utilising slightly deeper substrate than pure sedum roofs, hybrid sedum systems can incorporate a number of seeds or plug plants of wildflowers. These systems can provide an increase in nectar, pollen and larval host plants over pure sedum roofs, as well as increased structure through differing plant heights
- '*Green*' / '*brown*' - These 'classic' roofs utilise a deeper substrate (usually, between 80-200mm across the roof) to create wildflower rich dry grassland or replicate 'open mosaic habitats' of brownfield sites. They utilise about 80% commercial crushed brick or other high quality reclaimed materials, with 20% organic matter mixed in. They can be left with substantial amount of bare ground for species such as black redstart ('brown roofs) or more heavily seeded and planted as dry meadows ('green roofs').
These are now starting to be known as **Extensive Biodiverse Roofs** and are the preferred option for the London Borough of Sutton to create high quality habitat⁵⁰ within the urban environment.
- '*Biosolar*' - the combination of an extensive biodiverse roof with photovoltaic solar panels. The varying shade, water availability and humidity levels affect the species and vigour of vegetation, possibly creating increased niche availability for species, whilst the vegetation reduces temperature fluctuations, enabling the PV panels to operate with greater efficacy, through being stabilised at around 25°C for longer periods. Biosolar roofs should be **Extensive Biodiverse Roofs**, unless there are significant justifications why other options should be considered.
- '*Blue*' and '*blue/green*' - these roofs are now seeking to incorporate increased water retention on roofs, not just through slowing and reducing water by substrate and vegetation storage and evapotranspiration but through the creation of wetlands on roofs. Most of these, currently, are designed to be ephemeral but semi-intensive and intensive options are the next logical step. As with the creation of ponds at ground level, 'blue/green' options are likely to provide high quality habitat in a short space of time.
- **Semi-Intensive systems** = medium substrate: Substrate depths are between 120-250mm and weights are between 120-200kg/m². Most semi-intensive roofs replicate garden borders, with flower and shrub planting and are often used mainly for aesthetic purposes. However, increasing native species is highly likely to increase the biodiversity value of semi-intensive and intensive systems.
- **Intensive systems** = deep substrate: Substrate depths are usually between 150-400mm and weights are between 180-500kg/m². Intensive roofs form formal rooftop parks and gardens, with tree and shrub planting, although can also be utilised for urban agriculture.

3.2.2 'Green' Walls

'Green' or 'living' walls are vertical structures of vegetation.

The simplest and least expensive forms are *direct greening* solutions. These employ self attaching climbing plants growing directly up the building / vertical structures substrate, as ivy does, from ground level or a suspended suitable ledge or container with soil.

The next simplest form is *indirect greening*, which uses a support system of a trellis or wires to train climbers growing up the support system, leaving an air gap between the vegetation

⁵⁰ [Biodiverse Roof Best Practice](#)

and the building fabric. This can incorporate an increased variety of species, such as *Clematis*, *Jasminum*, *Rosa* etc. but is limited in the height able to be achieved, depending on the species.

Living wall systems (or 'facade bound') are engineered solutions that provide irrigated planting modules attached to a wider supporting frame. These systems can dramatically increase the species of plants available, as they do not need to be climbers but do require increased watering and maintenance.

Many *living wall systems* contain very few, if any, native species, concentrating more on continuous year round vegetation cover and, therefore, do not fulfil much in the way of increasing local biodiversity. However, species selection can be improved, to provide multi-functional benefits.

3.2.3. Soft landscaping

Soft landscaping is an integral part of many planning applications but often seeks to provide 'single benefits' to the development. These are often an aesthetic value with year round 'interest', coupled with low management requirements. The majority of soft landscaping schemes submitted through planning applications contain very low percentages of native species, if any. Most soft landscaping can be, usually, significantly improved.

Basic ecological principles can be employed to improve soft landscaping:

- **Physical structure** - providing a greater range of vegetation types increases niche availability. All soft landscaping should aim to have canopy trees, understory trees and / or shrubs, tall grass areas, field layers (up to about 2' high) and ground cover layers / short grass. Bare substrate is also often important, as are water sources. By creating structural heterogeneity, abiotic conditions are modified, including shelter areas, changing humidity levels, thermal inculcation levels etc. Each of these variables increases the opportunity for species to exploit the available resources. The BUGS 1 & 2 projects⁵¹ suggest that mature trees and vegetation '*in urban gardens could be the best way of enhancing abundance in the widest possible range of taxa*'⁵². Density of planting is also of significant importance in encouraging species.
- **Native species** - Native vs. non-native species arguments have been raging for years between various parties. Most UK gardens contain in the region of 70% non-native species and it has been demonstrated⁵³, an 'average' UK garden can contain large numbers of species but this may not be the case for most gardens. Further work, including the recent RHS Plants for Bugs⁵⁴ project, recommends a preponderance of native species, with the ability to include a mix of northern hemisphere and southern hemisphere species, to increase niche availability and to increase resource opportunity times (particularly late flowering southern hemisphere species).

Given that UK invertebrates are adapted to native UK plant species, particularly around larval host plants, the recommendation for a preponderance of native species should not come as a surprise but has not previously been fully quantified.

Many soft landscaping schemes presented as part of planning application propose the same restricted suite of plant species i.e. there appears to be a generic palette utilised by

⁵¹ <http://www.bugs.group.shef.ac.uk/BUGS1/bugs1-index.html>

⁵² <http://www.bugs.group.shef.ac.uk/BUGS1/sources/bugs-reprint8.pdf>

⁵³ <http://www.wlqf.org/Jennifer%20Owens%20studies.pdf>

⁵⁴ <https://www.rhs.org.uk/science/conservation-biodiversity/plants-for-bugs>

landscape architects, with little consideration for site specific conditions or multifunctional benefits.

As such, under this Habitat Action Plan, soft landscaping schemes within Sutton will be encouraged to plant a wide range of native plant species that provide multiple benefits for animal species (nuts, fruit, nectar, pollen, larval host plants etc.), to plant as much mature vegetation as possible and to use a preponderance of native species, with some exotics to broaden the resource opportunities.

At least **60%** by number of plant individuals and species variety to be planted will be native and local to the area, following the above principles of increasing species diversity and structure through providing canopy trees, an understory / shrub layer, field layer / tall grass and species rich grassland (including flowering lawn). Spring bulbs should be planted and ornamental species of value can be utilised to extend the flowering season. Whilst not definitive, ornamental species on the RHS 'Perfect for Pollinators' lists^{55,56} should be utilised.

These principles are also to be applied to Green Infrastructure, particularly Extensive Biodiverse Roofs, where the creation of drought tolerant dry grassland or Open Mosaic Habitats and associated hardy species can provide significant benefits to invertebrates and birds, in particular.

3.2.4 Species requirements

Although high quality soft landscaping can provide for a wide range of species, additional efforts can make substantial impacts on helping local wildlife. The London Borough of Sutton promotes gardening for wildlife in private gardens and through developments.

Numerous wildlife gardening guides are freely available (often on websites from the main wildlife charities), as well as books that can be purchased. The basic principles of wildlife gardening are similar to the principles espoused above for soft landscaping (niche availability through species and habitat diversity) but the London Borough of Sutton wishes to add in the following specific recommendations:

- **Hedgehogs** - Have suffered significant declines over recent years^{57,58} and one highlighted issue in urban areas is fragmentation of habitat⁵⁹.
To assist in creating a permeable landscape for hedgehogs within Sutton, all developments **creating two or more gardens** (which may include splitting existing back-garden land) with a solid barrier (fence or wall) will provide hedgehog holes. New developments should also provide at least 1 hedgehog home⁶⁰, preferably through creating a log pile or other natural features but also through the use of a box, if few opportunities for natural features exist.
- **Swifts** - Swifts have undergone significant declines (57% between 1995 and 2016⁶¹) in recent decades and one factor in their decline is the lack of suitable nesting habitat, as modern houses or refurbishments remove or seal up gaps, particularly around the eaves, to increase heat efficiency in the home.
As such, **all new build developments** with facades above 4m high should include at

⁵⁵ [RHS Garden Plants](#)

⁵⁶ [RHS Plants of the World](#)

⁵⁷ <https://www.bto.org/our-science/monitoring/hedgehogs>

⁵⁸ <https://www.hedgehogstreet.org/about-hedgehogs/how-many-hedgehogs-are-left/>

⁵⁹ <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

⁶⁰ <https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/>

⁶¹ [Help swifts](#)

least one multi-chamber swift box (external) or brick (incorporated into building fabric), such as the Genesis triple or Schwegler 17a or equivalent.

- Small scale developments should include at least **1 multi-chamber** boxes or bricks per dwelling,
- Medium scale developments should include at least **5 multi-chamber** boxes or brick across the estate buildings, and,
- Major developments should incorporate at least **12 multi-chamber** bricks or boxes across the estate buildings⁶²
- **House sparrows** - House sparrows have suffered significant declines in urban areas⁶³ and though the declines are not fully understood, creating feeding habit (through high quality soft landscaping) and increasing nest availability may help. Placement should be at least 10' (3m) above ground between north and east to avoid it getting too hot or wet. Avoid placing it in direct sunlight and don't put it over a doorway or well-used path. Placing adjacent to dense shrubbery (such as wild privet) would also be beneficial in providing access to cover:
 - Small scale developments should include at least **1 multi-chamber** 'terrace' box per dwelling,
 - Medium scale developments should include at least **5 multi-chamber** 'terrace' boxes across the estate buildings and grounds, and,
 - Major developments should incorporate at least **12 multi-chamber** 'terrace' boxes across the estate buildings and grounds
- **Starlings** - Another 'common' urban bird (**Figure 6**) that has suffered significant declines over the last few decades (66% since the mid-1970s⁶⁴). Like sparrows, the reasons for declines are multitudinous but increasing invertebrate numbers through soft landscaping and providing bird boxes could help⁶⁵:
 - Small scale developments should include at least **1 box** per dwelling or at least 2 boxes per development,
 - Medium scale developments should include at least **5 boxes** across the estate buildings and grounds, and,
 - Major developments should incorporate at least **12 boxes** across the estate buildings and grounds
- **Bats** - Of the 18 UK species (17 breeding species), around 8 species are regularly detected in London, with another 3 species being occasional. Providing high quality invertebrate habitat and landscape connectivity are vital to stemming long-term declines, as well as protecting existing roosts. Creating new roosts on and in buildings or within groups of trees may also help. Bats are often highly communal (especially breeding females) and require a range of micro-variable conditions (such as temperature and humidity levels) and may, consequently, move around a range of roost sites in a short time period, to find their preferred conditions. Installing several boxes at different ordinations on a tree or building should assist in adjusting for their sensitive requirements:
 - Small scale developments should include at least **2 per dwelling** or on mature trees at different ordinations between southeast and southwest,
 - Medium scale developments should include at least **8 boxes or bricks** at different ordinations between southeast and southwest across the estate buildings and grounds, and,

⁶² [Swifts boxes](#)

⁶³ [Urban House Sparrows](#)

⁶⁴ [Starling population trends](#)

⁶⁵ [Starling homes](#)

- Major developments should incorporate at least **12 boxes or bricks** at different ordinations between southeast and southwest across the estate buildings and grounds
- The use of 1 large maternity or winter roost box or brick counts as 2 boxes per development

Figure 6 - Starling (© D. Warburton)



3.2.5 Sustainable Urban Drainage Systems (SuDS)

Are another form of GI that can provide biodiversity benefits and are mainly covered under the Rivers and Wetlands HAP.

3.2.6 Back Garden Land

Back garden land is a significant resource within Sutton and London as a whole, accounting for a significant proportion of London's green space. As with all private property, the value of each individual garden for wildlife varies significantly.

The vegetation levels and quality within each property are under the direct influence of the owner and can be modified as the owners wish, as long as no legislation is breached. Thus, the loss of each individual garden cannot be prevented, outside of a planning application, and may not actually have any demonstrable impact on local biodiversity.

On the other hand, the reduction in green space through increasing hardstanding and buildings may be 'death by a thousand cuts', with each individual loss being small but adding cumulatively to wider landscape losses

Therefore, as outlined under Policy 13b of the Local Plan, the Council will not grant planning permission on areas of back garden land *'either individually or as part of a larger street block'* that are *'considered to be of local ecological value by the council'*.

Data to determine whether private residences or collections of back gardens are of 'local ecological value' only usually becomes available if a planning application is submitted and there are only certain circumstances where an ecological survey should be submitted. For back garden land, surveys are generally only required if protected species are likely to be affected or over 500m² of vegetation is to be removed, individually or collectively, which will be assessed through Biodiversity Net Gain.

In the evaluation of loss of back garden land, three factors will be considered:

- 1) any requirement for an ecological assessment / Biodiversity Net Gain evaluation on the site(s) in the information contained therein,
- 2) the current amount of infilling within the local area and,
- 3) the amount of post-development back garden land remaining in the local area

3.3 Trends

Numerous policies and guidelines now exist around the use of GI. Internationally, the benefits of GI are being more and more quantified, with positive impacts on air quality, Urban Heat Island Effect (UHIE) & urban cooling, flood prevention, pollution control & reduction and urban biodiversity. As such, GI measures are being incorporated into more and more developments, following the provided guidelines and policies, although the London Borough of Sutton does not, as yet, have information on how many have actually been delivered.

However, there is still an amount of resistance on the part of some developers to fully embracing the benefits of GI. The main arguments tend to be around the cost of implementing GI and the space available for GI.

Given the possible impacts of Biodiversity Net Gain and the Green Space Factor on planning applications, on site mitigation, through GI, needs to be fully explored during the planning development process. Otherwise, offsetting is likely to apply and developments may incur a substantial financial impact.

4. Specific Factors Affecting the Habitat Action Plan

4.1 Major factors

- Type of GI installed
- Delivery of Biodiversity Net Gain
- Cost of delivery
- Ongoing maintenance / Access for maintenance / Monitoring
- Isolation of sites
- Climatic changes

4.2 Supplementary factors

- Atmospheric pollution and nutrient enrichment
- Health and safety requirements for management
- Invasion of aggressive non-native species
- Opportunities for complimentary recreational use

5. Current Action

5.1 Legal Status

'Open Mosaic Habitats on Previously Developed Land' (aka 'Brownfield Land') is a Priority Habitat under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006. Therefore, creating replica Open Mosaic Habitats through the creation of extensive biodiverse roofs ('brown' roofs) can be considered as working towards the creation of a Priority Habitat.

Through Biodiversity Net Gain, extensive biodiverse roofs are weighted as 'moderate distinctiveness' (value of 4) to account for this replication of Priority Habitat, even though they are not remotely semi-natural habitats.

Some other types of Green Infrastructure, are, again, weighted higher than 'standard landscaping / amenity planting', to encourage the use of these items to address multifunctional issues, as outlined previously and in more detail in the Technical Guidance Note.

All breeding bird nests under construction or occupation are covered by the Wildlife and Countryside Act 1981 (as amended), whilst all bat roosts (even if not occupied) are currently covered under the Conservation of Species and Habitats Regulations 2017.

5.2 Mechanisms targeting the habitat

5.2.1 Policies

Through the NPPF, No Net Loss and Net Gain are already applicable for all developments and the Government has stated that Biodiversity Net Gain be mandated.

Given the time lag in delivering a national roll out of Biodiversity Net Gain, Sutton will continue to deliver on the Technical Guidance Note until such time as this is required to change, to comply with a national mandate.

5.2.2 Historical Management

No details are available as to work that has been undertaken in regards the creation and management of installed green infrastructure. One of the aims through this HAP is to create a database of what is currently in place (and will be created), so that checks can be made to ensure these not only fulfil the planning conditions / obligations but also are fit for purpose and deliver No Net Loss, Biodiversity Net gain and the Green Space Factor.

5.2.3 Resource Availability

Through the Building a Sustainable Sutton and Local Plan Policy 26, major developments and those likely to cause impact on local biodiversity will be subject to Biodiversity Net Gain and No Net Loss and be required, through s106 obligations to deliver No Net Loss and Biodiversity Net Gain for the life of the development / in perpetuity.

Therefore, the provision of habitats and ongoing management (a minimum of 30 years) will be resourced by the developer.

In regards assessment of planning applications and the requirement to cost up projects for delivery, should compensation monies be made available, these will sit within the Biodiversity Team but require further resourcing, particularly in regards the detailed costing

up of projects, Habitat Opportunity Mapping and post-completion checks of habitats. It is hoped that some compensation monies can be found to employ an officer specifically to deal with the delivery of Biodiversity Net Gain.

6. Priority Species

These species are indicators of higher quality environments and, often, are highly distinctive and recognisable, for even the untrained.

Common Name	Latin	Brief Description
Black redstart	<i>Phoenicurus ochruros</i>	A distinctive species of industrial urban landscapes and a target species for 'Open Mosaic Habitats' at both ground and roof level
Hedgehogs	<i>Erinaceus europaeus</i>	Familiar but declining snufflers, hedgehogs require surprisingly large territories and are negatively impacted in urban areas by solid boundaries
Swifts	<i>Apus apus</i>	Screaming sickle-winged masters of the air, swifts require specific nesting habitat in urban locations that mimics protected cliff edges
Starlings	<i>Sternus vulgaris</i>	A once common iridescent & speckled thrush-sized bird, this gregarious species can be encouraged through the use of simple nest boxes
House sparrow	<i>Passer domesticus</i>	Chirping and cheeping, the once-common house sparrow has suffered significant declines in urban areas
Bats (all species)	All members of the genus Chiroptera	Sophisticated and highly sensitive to environmental changes, provision of insect rich habitats across the landscape is vital for the world's only flying mammals
Peregrine falcon	<i>Falco peregrinus</i>	The world's fastest animal when 'stooping' after prey, peregrines are setting up home on man-made cliff replicas in the middle of towns and cities.
Thrift	<i>Armeria maritima</i>	A classic cliff-top coastal species that can thrive in the dry and windy conditions of biodiverse roofs. It is a cushion forming species with bright pink flowers, great for pollinators
Common rockrose	<i>Helianthemum nummularium</i>	A typical species of short turf chalk downland and the erstwhile main food plant for the brown argus butterfly, the bright yellow flowers of common rockrose provide nectar and pollen to invertebrates at roof level in replicated grassland or in rockeries at ground level

Bumblebees	<i>Bombus</i> spp.	Busy buzzing bundles of hair, even scarce bumblebee species have been recorded on flower rich extensive biodiverse roofs. Queen bumbles need lots of spring pollen and nectar to raise the next generation
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7.0 Objectives and Actions

This action plan aims:

- To promote the addition and management of Green Infrastructure (including soft landscaping) within developments
- To provide a mechanism for the delivery of habitat creation within Policy 26 Biodiversity of the Local Plan 2016-2031
- To quantify losses and gains of habitats through the planning process

Rationale:

The urban fabric is dominated by ‘grey infrastructure’, which has a significant impact on the presence of semi-natural habitats, through urban expansion and the reuse of previously developed land, which may have had biodiversity value (‘open mosaic habitats’, also known as brownfield sites).

This plan seeks to increase the amount of GI associated with appropriate development sites to such an extent that all developments incorporate biodiversity and that Biodiversity Net Gain can be quantified and delivered, in situ, where this delivers the best ecological outcomes. In the circumstances where on site mitigation to deliver No Net Loss and the required uplift cannot be achieved, Sutton will seek compensation monies to enable offsite habitat creation and restoration within the borough, in accordance with actions outlined within this Strategy.

7.1 Offsetting / Compensation Costs - ‘Biodiversity Tariff’

Offsetting / compensation costs are highly variable. Sutton has calculated the general costs of habitat creation (including the application of risk factors) across 3 habitat types, to determine a baseline cost, per hectare, of habitat to be created and managed⁶⁶.

The approach taken is that of Full Cost Recovery. This differs from costs applied by Warwickshire County Council, in that they apply costs derived from agri-environment schemes (Higher Level Stewardship etc.). Agri-environment scheme costs are ‘incentives’ for farmers / land managers to undertake specific works.

Agri-environment schemes generally assume that farmers / land managers have access to the necessary machinery to undertake habitat management and creation work. If one has to contract work, as is often the case for an urban area or Local Authority, the prices are significantly higher.

For instance, the London Borough of Sutton receives £200 per hectare of land entered under “HK7 Restoration of Species Rich Semi-natural Grassland” through the Higher Level Stewardship (HLS) scheme. The actual cost to LBS to pay a contractor for undertaking one

⁶⁶ See [Biodiversity Net Gain Costs](#)

cut (the minimum prescribed action required) is about £350 per hectare. Haymaking, baling and scarifying increase that cost. Any additional work, such as herbicide treatment or slot seeding, adds substantially to the costs for general management .

The above example is an incentive for specific *management*. The same applies to habitat *creation*. HLS will provide £280 per hectare for “*HK8 Creation of Species Rich Semi-natural Grasslands*”.

To purchase suitable, commercially available, seed to cover 1ha of prepared ground, suitable for a species rich grassland, is in the region of £1,800.

Ground preparation costs to ensure the seed will take correctly cost between £650 and £40,000 per hectare (depending on what is required to prepare the ground correctly). Soil evaluations to determine if the site is suitable for species rich grassland are about £200. If the site requires grazing, then fencing, water connections, troughs etc. all need installing.

In total, the *mean* cost for creation of 1ha of species rich grassland within Sutton, under full cost recovery, is calculated to be c.£34,000. Ongoing, in perpetuity, habitat management costs need adding to the creation costs, as does an ‘insurance / contingency’ fund and staff management costs to project manage or deliver offset schemes

Therefore, the London Borough of Sutton has to implement a **Full Cost Recovery** pricing policy, if delivery of Biodiversity Net Gain is to be achieved and the Borough is not subsidising development.

Compensation costs will be based on the habitats impacted. If none of the broad habitats which have had costs calculated are to be affected, a mean value per ‘biodiversity unit’ will be applied, to allow for flexibility in delivering habitat creation or restoration projects, as identified within this Strategy. The current *mean* cost of 1 biodiversity unit is **£93,570.48**

7.3 Habitat Action Plan Targets:

- GI1 To implement No Net Loss and Net Gain within all developments subject to the Technical Guidance Note
- GI2 To create, restore and enhance high quality habitats
- GI 3 To consider the adoption of a greater suite of biodiversity protection and enhancement within the review of the Local Plan

7.3.1 Actions

Code	Action	Lead
GI1	To implement Biodiversity Net Gain within all developments subject to the Technical Guidance Note	

GI 1.1	To implement BNG and Policies 26 and 13 through the review of planning application that may impact on biodiversity or provide opportunities for Net Gain Target: All major applications and all developments within 100m of a SINC or where more than 500m ² of vegetation is proposed for removal (including single or combined back garden land) reviewed and commented on; delivery of in situ biodiversity gains and habitat creation or enhancement undertaken off site	Senior Biodiversity Officer / Development Management
GI 1.2	To create a recording mechanism for all recommended GI within planning applications Target: 100% of planning recommendations captured per reporting year by 2020	Strategic Planning/ Senior Biodiversity Officer
GI 1.3	To undertake regular inspections to check for compliance with planning conditions Target: 10 green infrastructure planning conditions per annum until 2024	Planning Enforcement / Senior Biodiversity Officer
GI 1.4	To create a green infrastructure 'condition' assessment for rapid checking of green infrastructure performance and care Target: Condition assessment created by 2021	Senior Biodiversity Officer / Enforcement
GI2	To create new high quality habitats.	
GI 2.1	To utilise Habitat Opportunity Mapping to determine the best locations for new habitat (either as extensions to existing habitat or as corridors or stepping stones) to deliver the Habitat Action Plans. Target: HOM for the borough completed by 2021	GiGL / Strategic Planning / Senior Biodiversity Officer
GI 3	To consider the adoption of a greater suite of biodiversity protection and enhancement within the review of the Local Plan	
GI 3.1	To evaluate, evidence and consult on the adoption of a 20% (or 2 units/ha) 'uplift' on all developments (with some exceptions) to deliver Biodiversity Net Gain within the Local Plan review, in line with mandated national guidance	Strategic Planning / Senior Biodiversity Officer /

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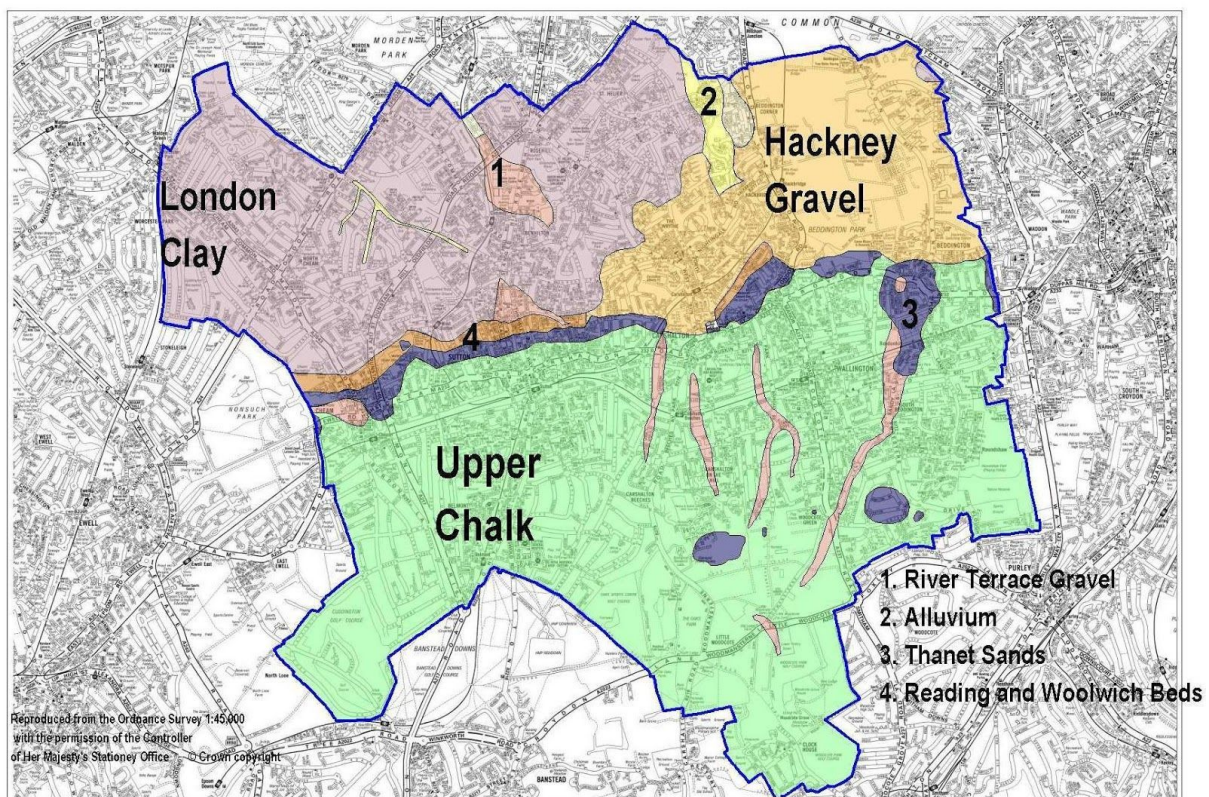
	Target: Evaluate the regional and national evidence base for a minimum mandatory uplift for the Local Plan review in 2023	
GI 3.2	To evaluate and, if acceptable, incorporate increased biodiversity measures ⁶⁷ within the Local Plan review Target: Evaluate the suitability and success of the recommendations within this HAP as part of the evidence base for the Local Plan review in 2023	Strategic Planning / Senior Biodiversity Officer / Senior Arboricultural Officer

⁶⁷ As per guidelines within this HAP for species and for all new build developments to provide information on wildlife gardening (either through a bespoke leaflet or provision of suitable literature)

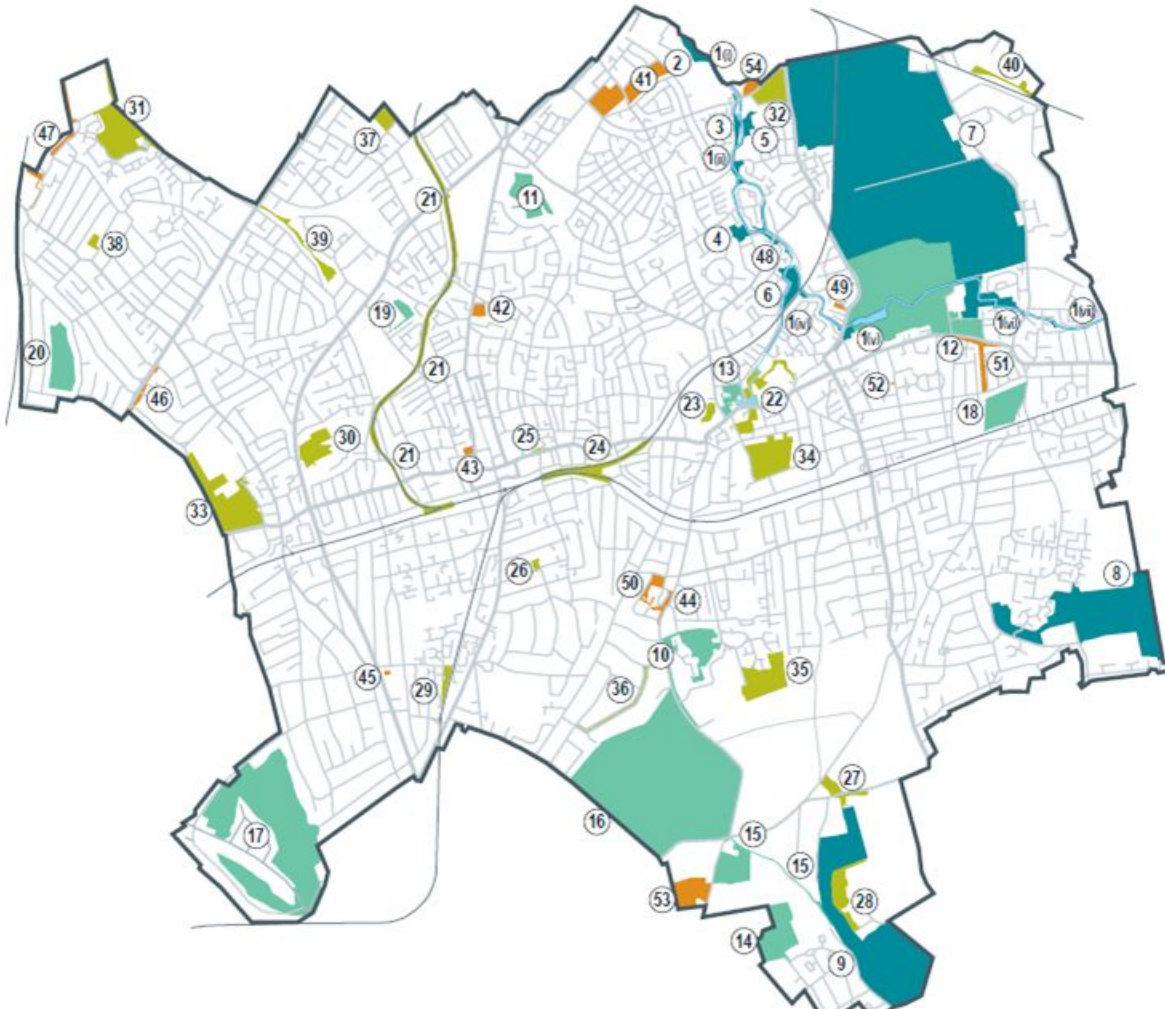
Appendix B6: Geology of Sutton and Sites of Importance for Nature Conservation

The maps below shows the geology of Sutton and Sites of Importance for Nature Conservation, as set out in the Council's Local Plan 2016-2031.

Map 1: Underlying geological strata in Sutton



Map 2: Sites of Importance for Nature Conservation (Local Plan 2016-2031)



Key to site numbers in Map 2.

SINC Number	Site Name	Grade
SINC 1 (i) - (vii)	The River Wandle	M
SINC 2	Poulter Park Riverside	M
SINC 3	Wandle Valley Wetland	M
SINC 4	Dale Park	M
SINC 5	Spencer Road Wetland	M
SINC 6	Wilderness Island	M
SINC 7	Beddington Farmlands	M
SINC 8	Roundshaw Downs	M
SINC 9	Woodcote Park Golf Course	M

SINC 10	Queen Mary's Woodland, Wellfield Plantation and Grasslands and Woodmansterne Road Woodland	B1
SINC 11	Greenshaw Wood and Rosehill Park East	B1
SINC 12	Beddington Park	B1
SINC 13	Sutton Ecology Centre	B1
SINC 14	Ruffett, Big Wood and adjacent Meadow	B1
SINC 15 (i-ii)	Carshalton Road Pastures and Grove Lane Hedge	B1
SINC 16	The Oaks Park and Golf Course	B1
SINC 17	Cuddington open Spaces and Golf Course	B1
SINC 18	Bandon Hill Cemetery	B1
SINC 19	Anton Crescent Wetland	B1
SINC 20	Cuddington Recreation Ground	B2
SINC 21 (i-iii)	Sutton to St. Helier Railway Line	B2
SINC 22	Carshalton Ponds, Grove Park and All Saints Churchyard	B2
SINC 23	St Philomena's Lake	B2
SINC 24	The Warren Railway Lands	B2
SINC 25	Water Gardens Bank	B2
SINC 26	Devonshire Avenue Nature Area	B2
SINC 27	Little Woodcote Wood	B2
SINC 28	Woodcote Grove Wood	B2
SINC 29	Belmont Pastures	B2
SINC 30	Perrett's Fields and Sutton Water Works	B2
SINC 31	Mayflower Park	B2
SINC 32	Mill Green	B2
SINC 33	Cheam Park	B2
SINC 34	Carshalton Park	B2
SINC 35	Queen Mary's Park	B2
SINC 36	Pine Walk Roadside Island	B2
SINC 37	Sutton Common Paddock	B2

SINC 38	Cuddington Cemetery	B2
SINC 39	Pyl Brook	B2
SINC 40	Therapia Lane Rough	B2
SINC 41	Revesby Road Wood	L
SINC 42	All Saints Churchyard, Benhilton	L
SINC 43	St. Nicholas Churchyard, Sutton	L
SINC 44	Radcliffe Gardens Woodland	L
SINC 45	The Avenue Primary School Nature Garden	L
SINC 46	London Road Edge	L
SINC 47	Beverley Brook	L
SINC 48	The Spinney	L
SINC 49	Caraway Place Pond	L
SINC 50	Barrow Hedges Primary School	L
SINC 51	Queen Elizabeth Walk	L
SINC 52	St. Mary's Courtyard Wildflower Area, Bute Road	L
SINC 53	Lambert's Copse	L
SINC 54	Land North of Goat Road	L

M = Sites of Metropolitan Importance
 B1 = Sites of Borough Importance, Grade I
 B2 = Sites of Borough Importance, Grade II
 L = Sites of Local Importance