LONDON BOROUGH OF RICHMOND UPON THAMES

Biodiversity Action Plan

BICHMOND BIODIVERSITY PARTNERSHIP

The Biodiversity Action Plan for the London Borough of Richmond upon Thames was written by the Richmond Biodiversity Partnership.

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Executive Summary

This Local Biodiversity Action Plan (LBAP) for the London Borough of Richmond upon Thames (LBRuT) sets out the framework for the protection, conservation and enhancement of wildlife within the borough. Through its implementation, the plan protects and manages habitats and species of national, regional or local significance, or those that are in the Red Data Books and on the Red Lists. It is also used by Richmond Council's Planning Department to ensure the impact of new developments and changes to existing developments are minimised to the species and habitats featured in the LBAP.

This strategy document is a comprehensive revision building on the successes of the previous plan which was launched in June 2005 and updated in 2011. It is a collaborative effort by the Richmond Biodiversity Partnership (RBP), which also oversees its implementation and works on achieving the targets and actions set out in the plan.

The main aims of this Richmond upon Thames Biodiversity Action Plan are:

- 1. To conserve and enhance the variety of habitats and species in the London Borough of Richmond upon Thames, in particular those which are of international or national importance, are in decline locally, are characteristic to the borough and/or have particular public appeal, which can raise the profile of biodiversity.
- 2. To ensure that Richmond upon Thames' residents become aware of, and are given the opportunity to become involved in, conserving and enhancing the biodiversity around them.
- 3. To raise awareness and increase stakeholder involvement in maintaining and, where possible, enhancing species and habitats of importance.

Over the past 13 years, much has been achieved in terms of understanding, conserving and enhancing local biodiversity. However, species and habitats highlighted in this BAP remain threatened, mainly by factors related to human activities. In addition to individual habitat action plans (HAP) and species action plans (SAP) the LBAP identifies a set of generic actions needed. These focus on public engagement, promotion of the plan to a wider audience as well as monitoring and data sharing. Actions also aim at ensuring the LBAP is taken into account in planning decisions, scrutinising any reports prepared for these decisions, and requiring mitigation for increased urban surfaces in any development to offset further urbanization. Preparing a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc. is another overarching target for the plan.

Each habitat and species action plan sets out specific aims, assesses the current status and specific factors affecting the habitat/species, and identifies actions needed to ensure habitats are maintained and, where necessary, enhanced, and for species to survive and thrive in the borough.

The priority habitats in LBRuT are ancient and veteran trees, broadleaved woodland, hedgerows, lowland acid grassland, neutral grassland, private gardens, reedbeds, rivers and streams, and the tidal Thames. These habitats are also of regional and national importance.

The priority species in LBRuT are bats, native black poplar, hedgehogs, house sparrows, song thrushes, stag beetles, swifts, tower mustard, water voles and white-letter hairstreak and elm. These species are also of regional and national, and, in some cases, international importance. The plan also includes a pollinator action plan that specifies the actions needed to help reverse the decline in pollinator populations in the borough.

The continued success of this plan lies in its implementation. In a collaborative effort, we can ensure Richmond upon Thames remains rich in wildlife and a green and pleasant urban borough not only for our benefit but also for generations to come.



Acknowledgements

I would like to thank all members of the Richmond Biodiversity Partnership who have contributed and helped to compile this Biodiversity Action Plan for the London Borough of Richmond upon Thames.

I am grateful for everyone's knowledge, enthusiasm, efforts, time, help and support in updating and putting this document together. This is testament to the strong working relationship built through the Richmond Biodiversity Partnership over the past 13 years. Having the support and dedication of all partners will ensure that the actions set out in each of the Species and Habitat Action Plans will be implemented, making this LBAP a successful one.

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Members of the Richmond Biodiversity Partnership







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Introduction

1. The Richmond upon Thames Biodiversity Action Plan to date

In 2005, the first Richmond upon Thames Biodiversity Action Plan (LBRuTBAP) was launched, covering five habitats and six species considered to be a priority for biodiversity conservation in the London Borough of Richmond upon Thames (LBRuT). For each species and habitat, an action plan was set up. These were:

- Habitat Action Plans (HAP): Acid Grassland, Ancient and Veteran Trees, Broad Leaved Woodland, Reedbeds, and Tidal Thames.
- Species Action Plans (SAP): Bats, Mistletoe, Song Thrush, Stag Beetle, Tower Mustard, and Water Vole.

Each plan provided guidance for local planning decisions, as well as specific biodiversity targets aimed at conserving and, where possible, enhancing each species/habitat presence. In 2011, the targets in the action plans were reviewed and updated; however, the LBRuTBAP as a whole was not revised.

This plan, launched in 2019, is the first major revision of the BAP since 2011 and provides an update of each of the original species and habitats plans with the exception of the Mistletoe SAP. Given the great success in propagating this species across LBRuT, it has not been included in the update. However, a further six species and four habitats have been added, bringing the total to eleven species and nine habitats. The newly-added habitat and species action plans are as follows:

- Habitat Action Plans (HAP): Hedgerows, Neutral Grassland, Private Gardens, and Rivers and Streams.
- Species Action Plans (SAP): Native Black Poplar, Hedgehogs, House Sparrows, Swifts, White-letter Hairstreak and Elm and Pollinators.

New biodiversity targets have also been set for the period 2018-2022.

The main aims of this Richmond upon Thames Biodiversity Action Plan are:

- To conserve and enhance the variety of habitats and species in LBRuT, in particular those which are of international or national importance, are in decline locally, are characteristic to the borough and/or have particular public appeal, which can raise the profile of biodiversity.
- To ensure that Richmond upon Thames' residents become aware of, and are given the opportunity to become involved in, conserving and enhancing the biodiversity around them.
- To raise awareness and increase stakeholder involvement in maintaining and, where possible, enhancing species and habitats of importance.

1.1 Key Achievements since 2005

The Richmond BAP group and the constituent HAP and SAP working groups have been very active over the thirteen years since the original plan was produced in 2005. This section identifies a few of the key achievements over this period.

Most of the Action Plans focused initially on surveying and mapping each species' population and/or habitat location in LBRuT, in order to inform conservation efforts. As an example, most of the black poplar (*Populus nigra* ssp. *betulifolia*) trees in the borough have been mapped and many have been uniquely identified through genetic testing. This work has revealed the black poplar population in the LBRuT to be genetically diverse, possibly one of the most diverse in the UK, and thus critically



important for conserving this species. On-going action across all Action Plans also targeted planning decisions in the borough, when these may be or are known to affect habitats or species in this BAP.

Further achievements in the HAPs:

- Improving the health of each habitat through invasive species removal and control of pests and diseases. For example, in the case of oak processionary moth, working across LBRuT, including Richmond and Bushy Parks, and incorporating veteran tree protection.
- In excess of 1500m of newly planted hedgerows with more than 2000m of hedgerows maintained across LBRuT.
- New reedbeds created (e.g. smaller-sized on Barnes Common and along the River Crane through to larger-sized in Bushy Park); some reedbeds restored (e.g. Pen Ponds in Richmond Park) and successfully expanded (e.g. London Wetland Centre) to contribute a significant proportion (5%) towards the total found within Greater London.
- Around 1000 metres of river restoration works along rivers and streams in LBRuT principally along the River Crane, Lower Duke's River and Beverley Brook.
- Creation of large new areas of marginal river and wetland habitat throughout the tidal Thames.

Further achievements in the SAPs:

- Awareness-raising through the production of informative leaflets for each species, regular guided walks, and use of social media to encourage people to record their species sightings in the LBRuT.
- A hedgehog interactive map was created with 1800 visits and 27 sightings recorded since 2016. A video about hedgehogs was also produced with more than 600 views so far.
- Stag beetle loggeries as well as bat and bird boxes have been installed in large numbers of sites across LBRuT.
- A paper on bats, "Twenty years of bat monitoring at the London Wetland Centre: showing the biodiversity value of a man-made urban reserve" (Mayfield, H. et al. 2017), sets out the way this habitat has been managed as part of the wider tidal Thames to the Richmond Park bat corridor.
- Habitat enhancement has been carried out along the River Crane to benefit water vole as a result of which this species has expanded from a core site at Crane Park Island Nature Reserve to larger populations over several kilometres of the River Crane and Lower Duke's River.
- Twenty six seedlings were obtained from a hand pollination of native black poplars in Richmond Park and are now being grown to be planted in the park. Around 20 black poplars have been planted at various locations across LBRuT.
- The tower mustard population within the one site at Stain Hill has been protected and expanded to a larger part of the site. Attempts have also been made to transplant to other sites across LBRuT.
- Mistletoe has been successfully transplanted by hand to a large number of sites across LBRuT. This process has been so successful that mistletoe management appears to be sustainable across the borough and embedded into sufficient numbers of management plans. While the species remains a priority, it is thought no longer to require the focus of a specific SAP within the present proposals.



Over the past 13 years, much has been achieved in terms of conserving and enhancing local biodiversity. However, species and habitats highlighted in this BAP remain threatened, mainly by factors related to human activities, thus it makes sense to review what has been accomplished to date and to set new biodiversity targets.

1.2 Biodiversity and Sustainable Development

Biodiversity, or biological diversity, is the 'variety of life' - the myriad plant and animal species, the range of habitats in which they live, and the natural processes of which living things are a part. This includes the living organisms, the genetic differences between them, and the communities in which they occur.

Sustainable development is often defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland Commission 1987).

Biodiversity and sustainable development are therefore inextricably linked, as the wealth of species and habitats can be seen as an indicator of our environmental health and general well-being. This has been recognized by the United Nations in their new Sustainable Development Goals (SDG), which explicitly target biodiversity in Goal 15 (Life on Land). Considerable evidence highlights a significant decline in biodiversity on a global, national and local scale over the years. Biodiversity Action Plans are considered to be a critical aid to reverse this decline and help conserve, protect and enhance species and habitats that are rare, in decline, of importance and of value locally. In addition, such plans can help educate the public and raise awareness.

Property owners, managers, and developers are increasingly aware of the requirements for sustainability and one of the aims of this plan is to provide information on key habitats and species that will help them to take informed decisions.

1.3 What is a Biodiversity Action Plan?

A Biodiversity Action Plan (BAP) is an evolving strategy and delivery mechanism for the conservation of biological diversity and the sustainable use of biological resources. A Local BAP (LBAP) lists prioritised actions for protecting, conserving and enhancing those species and habitats that are of local importance. The list of species and habitats in the LBRuTBAP reflects and supports those contained within the London and UK Biodiversity Action Plans.

This BAP aims to protect and celebrate the wildlife in LBRuT through a series of actions in order to improve the overall environment and contribute to enhancing biodiversity within the borough.

Implementing the BAP has involved a large number of local groups, individuals and organisations since its inception in 2005. These groups collaborate to monitor the biodiversity within LBRuT and help to gauge the quality of our environment through the indicators provided by the success of the habitats and species supported. The groups also meet together four times a year as the Richmond Biodiversity Partnership (RBP) to compare the actions taken and achievements with the goals in the Action Plans.

1.4 Why we need to conserve Richmond's biodiversity

In LBRuT, there are ever-increasing demands on land for new housing, commerce and recreation, which have resulted in habitats being threatened and the abundance of species diminishing. Wildlife in London still faces major challenges from the demands of a growing and more compact city, lack of resources to manage sites and habitats, and lack of awareness of the value of conserving biodiversity in an urban environment. In LBRuT, we set out to conserve and improve these complex and dynamic systems which support a wide range of fauna and flora.



In order to conserve LBRuT's biodiversity, we need to reverse the decline of species and habitats and ensure through the LBRuTBAP that proactive conservation is undertaken by all sectors of the community.

While conservation is often more complex in an urban environment than in the countryside, the availability of nature as an education resource for many more people, and its ability to be seen and understood by opinion-formers, more than justifies the additional effort required.

1.5 The Importance of People

A broad partnership is important in the production and implementation of any LBAP, as local groups and organisations can be brought together to share expertise, knowledge, resources and responsibilities. Representation from organisations operating within LBRuT is needed to consider the views of those who have the most influence upon local biodiversity. An effective partnership also needs to involve the general public as well as key players such as landowners and managers. The involvement of the general public is essential from the start of any LBAP process, as without public support, attempting to translate the LBAP from a document into proactive conservation action on the ground will be a futile task. Raising awareness is a positive process for two main reasons:

- Heightening people's appreciation of their local environment will generate a feeling of long-term stewardship.
- Increased awareness may reduce incidences of unintentional damage or disturbance through ignorance.

It should be noted that there has been a long established commitment and dedication to nature conservation and wildlife in LBRuT through the determination and efforts of various landowners, including Richmond Council, as well as organisations, community groups, volunteers and local residents. The borough includes around 70 Friends and local amenity groups with an interest in local open spaces. Each of these has access to the Richmond Biodiversity Partnership and many are represented on it.

2. The History of Biodiversity since 1992 – Internationally to Locally

2.1. International Action - The Earth Summit

In Rio de Janeiro in 1992 the largest gathering of world leaders met for the UN Conference on Environment and Development, demonstrating that environmental concerns had become a high priority on the world's political agenda. As part of the International Agreement on Sustainable Development ("Agenda 21"), over 167 nations, including the UK, signed up to the 'Convention on Biological Diversity of Species and Habitats', agreeing that direct action must be taken to halt the extinction of the world's biodiversity.

2.2. The Convention on Biological Diversity's (CBD) Strategic Plan for Biodiversity (2011-2020)

Progress since the 1992 Earth Summit has been slow, with environmental degradation worsening. However, in 2010, in Nagoya, Japan, a new Strategic Plan for Biodiversity was approved for the 2011-2020 period, with five goals and 20 biodiversity targets. Its mission is *to "take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication."* The goals and targets provide a flexible framework in which to establish national or regional targets.



2.3. National Action – The UK Biodiversity Group

In December 1993, a number of conservation organisations published a report entitled "Biodiversity Challenge: An Agenda for Conservation Action in the UK". Subsequently, two further documents were produced in the UK, which outlined the nation's commitment to biodiversity. The UK was one of the first countries in the world to respond to the Biodiversity Convention, which is documented in "Biodiversity: The UK Action Plan", which was launched in 1994. Subsequently, the National Biodiversity Steering Group was established and in 1995 published a two-volume document titled "Biodiversity: The UK Steering Group Report", which contained:

- Targets and costed action plans for key habitats
- Proposals for a UK biodiversity database with the establishment of a network of Local Record Centres.
- Recommendations for raising public awareness of biodiversity.
- Proposals for action at the local level, including guidance on preparing LBAPs.

The Government endorsed the report of the UK Steering Group in April 1996. In 1997, the Steering Group, now named the UK Biodiversity Group, produced guidance notes for the production of LBAPs. It was recognised from the outset that the success of the national document relied on the production of LBAPs, which detailed particular requirements of local biodiversity and were put together by a partnership of local organisations, charities and individuals.

2.3.1. Working with the Grain of Nature: A Biodiversity Strategy for England

DEFRA (Department for Environment, Food and Rural Affairs) produced "Working with the grain of Nature: a biodiversity strategy for England" in 2002 in partnership with a broad range of stakeholders in the public, voluntary and private sectors. The Strategy sought to ensure biodiversity considerations became embedded in all main sectors of public policy and set out a programme for the next five years to make the changes necessary to conserve, enhance and work with the grain of nature and ecosystems rather than against them.

2.3.2. Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services

Following the CBD's Strategic Plan for Biodiversity and the EU Biodiversity Strategy in 2011, DEFRA published "Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services", which superseded the above strategy and aims to set "a more effective, more integrated landscape-scale approach". The Strategy identifies key sectors and actions to take, including:

- Agriculture To improve the delivery of environmental outcomes from agricultural land management practices, whilst increasing food production by, for example, reviewing how agrienvironment schemes are used.
- Forestry To bring a greater proportion of our existing woodlands into sustainable management and expand the area of woodland in England.
- Planning and Development Through reforms of the planning system, take a strategic approach to planning for nature; retain the protection and improvement of the natural environment as core objectives of the planning system; and pilot biodiversity offsetting, to assess its potential to deliver planning policy more effectively.
- Water Management Protect water ecosystems, including habitats and species, through a river basin planning approach; promote approaches to flood and erosion management which conserve the natural environment and improve biodiversity.

- Marine Management Develop ten Marine Plans which integrate economic, social and environmental considerations.
- Fisheries To ensure fisheries management supports wider environmental objectives, including the achievement of Good Environmental Status under the EU Marine Strategy Framework Directive.

2.4. Regional Action - The London Biodiversity Partnership

In September 1996, the London Biodiversity Partnership (LBP) was established in conjunction with a prospectus ("Capital Assets") for biodiversity in Greater London. The partners included a wide variety of environmental organisations, the private sector, London boroughs, major landowners and corporate organisations who had agreed to support the implementation of this regional strategy.

In January 2000 the London Biodiversity Partnership published Volume 1 of the London Biodiversity Action Plan, 'The Audit', which takes stock of London's priority habitats and species, and provides an assessment of their status, threats and needs. 'Our Green Capital' was also published in 2000, as a follow on to 'Capital Assets' (1996), and as a companion to 'The Audit' and introduction to the Partnership's work.

The Biodiversity Action Plans were published between 2001 and 2005. The London Biodiversity Partnership ceased in 2013 due to lack of funding. However, the action plans are still being delivered at local level.

In July 2002, the Mayor of London published the Mayor's Biodiversity Strategy, which was the first statutory strategy of its kind in the UK. It set out the Mayor's vision to maintain London's biodiversity as a crucial part of a sustainable world city with 14 policies and 72 proposals to implement the policies, listing the main partners including national organisations and the London boroughs who can ensure the policies are achieved on the ground. The policies set out the key principles: that LBAPs are an innovative way to involve key stakeholders and members of the public to ensure priority habitats and species are protected and enhanced at a local level. The Strategy also encouraged and supported the production and implementation of Local BAPs as an integrated element of Community Strategies.

2.5. Local Action - The Richmond Biodiversity Partnership

In 1996, as part of the local Agenda 21 process, the Richmond Biodiversity Group was formed, which comprised representatives from Richmond Council, London Ecology Unit, London Natural History Society, London Wildlife Trust, Royal Botanic Gardens Kew, The Royal Parks, Thames Landscape Strategy, Wildfowl & Wetlands Trust in Barnes and other local groups with an interest in wildlife and ecology.

This group has continued in one form or another since this time and has played an active role in protecting and enhancing local environments across the borough. Other participants now include nationally known organisations such as Historic Royal Palaces and active local charities such as Friends of the River Crane Environment.

LBRuT launched the first London Borough of Richmond BAP in 2005. In 2011, responsibility for organising and chairing the LBRuTBAP was handed over to local environmental charity South West London Environment Network (SWLEN). The Richmond Biodiversity Group was, at the same time, renamed Richmond Biodiversity Partnership (RBP) to reflect its partnership structure.



3. Wildlife within Richmond upon Thames

3.1. Sites of Metropolitan, Borough and Local Importance for Nature Conservation in the London Borough of Richmond upon Thames

LBRuT covers approximately 5,500 hectares and it is the only London borough to straddle both sides of the River Thames. The borough is believed to have one of the richest ecologies in London in terms of the total area of green space, the quality and diversity of parks, open spaces and conservation areas and the wealth of different habitats and species these areas support, as many of the species are also important on a regional, national and international scale.

There are many landowners within LBRuT including the local authority. Richmond is fortunate to have two Royal Parks - Richmond Park and Bushy Park. Other large green spaces are Home Park and Hampton Court Palace, the London Wetland Centre in Barnes and the Royal Botanic Gardens Kew. Nature conservation value is an intrinsic component of these areas and this is recognised by the efforts of individuals, groups and organisations to protect and enhance the habitats and species of importance.



The London Ecology Unit undertook a Phase 1 habitat survey of LBRuT in 1987, which initiated the production of the London Ecology Unit's "Ecology Handbook – No. 21 Nature Conservation in Richmond upon Thames". This, as well as other surveys undertaken since, identified LBRuT as ecologically important for an array of habitats including woodland, grassland, scrub and wetland.



3.2 Conservation Areas within London Borough of Richmond upon Thames

Many important areas of land in LBRuT have both statutory and non-statutory designations.

Sites of Metropolitan Importance to Nature Conservation

There are currently ten sites within the borough, which contain the best examples of London's habitats, sites with rare species, rare assemblages of species, or which are of particular significance within large areas of otherwise built-up London. These areas afford the highest priority for protection.

Sites of Borough Importance to Nature Conservation (grades 1 and 2)

There are currently five grade 1 and fifteen grade 2 sites within the borough. These include woodlands, rivers, grasslands and some of the more mature parks which have ancient trees and meadows.

Any damage to these sites would mean a significant loss to LBRuT. Borough sites are divided into two grades based on their quality, but both are very valuable to local biodiversity.

Sites of Local Importance to Nature Conservation

There are currently 23 sites within LBRuT that are of particular value to nearby residents. These local sites are particularly important in areas where there may be a deficiency in wildlife sites.

Table 1 lists all the sites within the LBRuT, which have been designated with a conservation status



World Heritage Site	National Nature Reserves/ Special Area of Conservation*	Sites of Special Scientific Interest*	Local Nature Reserves*	Sites of Metropolitan Importance to Nature Conservation**	Sites of Borough Importance to Nature Conservation**	Sites of Local Importance to Nature Conservation**
RBG Kew	Richmond Park	Richmond Park	Barnes Common	River Thames & tidal tributaries	Royal Mid-Surrey Golf Course	Marble Hill Park and Orleans House Gardens
		Bushy Park & Home Park	Crane Park Island	Richmond Park & areas	Hampton Court Water Works	North Sheen and Mortlake cemeteries
		WWT London Wetland Centre	Ham Common	Bushy Park & Home Park	Hydes Field	East Sheen and Richmond Cemeteries and Pesthouse Common
			Ham Lands	The Crane Corridor	Lonsdale Road Reservoir	Hampton Common
			Lonsdale Road Reservoir	RBG Kew	Duke of Northumberland's River at Whitton	The Copse at Hampton Wick and Normansfield Hospital
			Oak Avenue, Hampton	Hounslow Heath (1 ha in Richmond)	Fulwell and Twickenham Golf Courses	Ham Common West
				Ham Lands	Strawberry Hill Golf Course	Twickenham Cemetery
				Barnes Common	Petersham Meadows	Terrace Field and Terrace Gardens
				WWT London Wetland Centre	The Copse and Holly Hedge Field	Teddington Cemetery
				Stain Hill & Sunnyside Reservoirs	Petersham Lodge Wood	Kew Pond and Kew Green
					Longford River in Richmond	Moormead Recreation Ground



		Hounslow Feltham and Richmond Junctions	Twickenham Junction Rough
		Hatherop Burning Ground	Portlane Brook and Meadow
		Barn Elms Playing Fields	The Cassel Hospital
		The Beverley Brook from Richmond Park to the River Thames	Hampton Court House Grounds
		Occupation Lane and Kew Railway Embankment	Twickenham Road Meadow (part of Old Deer Park)
		Oak Avenue Local Nature Reserve	Mortlake Cemetery – Old Mortlake Burial Ground
		River Crane at St Margaret's	Hampton Cemetery
		Duke of Northumberland's River	Pensford Field
		Kew Meadow Path	Barnes Green Pond
			Beveree Wildlife Site
			Churchyard of St Mary with St Alban, Teddington
			St James's Churchyard, Hampton Hill
			St Margaret's Pleasure Grounds and The Convent

*Natural England **Richmond Council



3.3. Habitats

LBRuT is exceptionally fortunate in supporting a wealth of different habitats for an urban area, several of which are important on an international scale. Safeguarding and enhancing habitats is the key to conserving biodiversity. A good quality habitat can support a far richer range of species than a poor quality or mismanaged one. One of the main aims of the LBRuTBAP is to halt further habitat loss, to enhance the quality of what is left through improved management and, where possible, increase the habitat resource through creation and/or restoration.

The list of habitats and species is not exhaustive, but the LBRuTBAP aims to concentrate on and prioritise those that are rare, in decline, characteristic of LBRuT, or considered locally important, in order to help raise the profile of biodiversity as well as conserve, protect and enhance those habitats and species of value.

The LBRuTBAP also recognises the close relationship between habitat quality and species survival. This is particularly important with regard to 'connectivity' - wildlife corridors and 'stepping stones'--which provide invaluable habitat access to mobile species in an urban environment.

The UK Steering Group Report provides a list of 38 key (14 priority, 24 conservation concern) habitats for which conservation action is required (JNCC 1995). It also recommends that species and habitat priorities be set in a local context, a key factor in the production of a LBAP. Recommended criteria to select priority habitats include:

- UK priority habitats selected by the UK Steering Group Report, particularly those characteristic of London and the local area.
- Those that are facing local decline.
- Those that can be considered a 'flagship' habitat i.e. they appeal to the public and are, therefore useful publicity tools.
- Those that have significance in a national and regional context.
- Those that support key priority species.
- Those that have potential for enhancement.

Using these criteria, the following habitats have been identified as being of particular priority in LBRuT and a Habitat Action Plan has been developed for each of them in the 2019 lan.

Habitat	UK/London Priority habitat present in Richmond	Local decline	Flagship	Local significance	Support key species	Potential for local enhancement
Lowland Acid Grassland	Х	Х		Х	Х	Х
Ancient and Veteran Trees	Х		Х	Х	Х	х
Broadleaved woodland	Х			Х	Х	Х
Hedgerows				Х	Х	Х
Neutral Grassland				Х	Х	Х



Private Gardens	Х	Х		Х	Х	Х
Reedbeds	Х				Х	Х
Tidal Thames	Х	X	X (River Thames Corridor)	Х	Х	Х
Rivers and Streams				Х	Х	Х

3.4. Species

The protection and appropriate management of a habitat should generally ensure the survival of individual species associated with that particular habitat. However, some species have reached such critically low levels in their population numbers that they require specific attention. Conservation action to conserve priority habitats and species will also have beneficial effects on other species, for example through protecting their natural habitats, food sources etc. which, although not considered a priority now, may well become so in the future without appropriate management.

The UK Steering Group Report listed 1250 species, which require conservation action. This list is sub-divided into two sections, those that are considered 'priority species', and those that are of 'conservation concern'. An area as diverse as LBRuT supports a huge number of species from both lists. The UK Steering Group has produced guidelines for selection, which are as follows:

- All priority species. Conservation action at the local level will contribute to national species targets.
- Those facing local decline.
- Those that can be used to raise the profile of biodiversity in the public eye.
- Those that are characteristic of the borough.
- Those that serve as good indicators of habitat quality.

Using the above criteria, the following species have been identified as being of particular priority in LBRuT and a Species Action Plan has been developed for each of them in the 2019 plan.

Species	UK species of 'priority' or 'conservation concern found in LBRuT	National decline	Profile raiser	Characteristic of LBRuT	Good indicator species of a particular habitat*
Bats	X	Х		X	X Dauberton's Bats indicator for water quality Rivers and Streams HAP
Black Poplar	Х	Х		Х	
Hedgehogs		Х	Х		
House Sparrow		Х	Х	X	
Song Thrush	Х	Х			Х

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					Scrubland Private Gardens
Stag Beetle	Х	Х		Х	X
					Decaying Wood
Swift		Х		Х	
Tower Mustard	Х	Х		X	
Water Vole	Х	Х	Х	Х	Х
					Rivers and streams
White-letter	Х	Х	Х	Х	Х
Hairstreak and Elm					Health of elms
Pollinators		Х	Х		

* An indicator species is a species whose presence/absence or decline/increase provides an insight into the quality of the habitat with which it is associated. Obviously there are no indicators which can tell us everything. However, a well-chosen one can give even the most casual observer a good overview of the habitat in question.

4. Monitoring, Reporting & Review

The monitoring, reporting, and review process is key to the success of the LBRuTBAP. Monitoring is an important feature within the process, as it helps to identify whether targets detailed within the individual Species and Habitat Action Plans have been met and if not, to identify why these targets have not been met so that revisions can be made to the BAP.

This BAP is not meant to be a static document, but rather a constantly evolving process, to meet the requirements on a local level and to ensure proactive conservation continues on the ground to protect and enhance LBRuT's priority habitats and species.

The current edition of the LBRuTBAP will run for an initial 5-year period, automatically extended unless and until replaced by a new plan. The action plans will be reviewed every year, to take into account new information about particular resources such as monetary funds, volunteer or staff capacity, whether the timings of individual actions need to be refined, and whether new action plans are required as well as taking into account changes in local conditions. The annual review will also highlight all the progress and action that has been undertaken in LBRuT as well as highlighting the priorities for action for the forthcoming year.

4.1 The Role of Leads and Other Partners

A lead has been identified for the LBRuTBAP as a whole and for each HAP and SAP, whose contact details can be found at the end of all the plans. The lead's role is to co-ordinate the work and actions of all the partners that are listed to ensure that implementation is recorded and monitored. This information will be used to produce an annual report. The lead will not be solely responsible for undertaking the actions. The 'other partners' identified in the actions are some of the implementers, but there will be many organisations not involved in the process of putting the plans together that are needed on board, and all are both welcome and encouraged to get involved.

4.2 The Role of Action Plan Working Groups

Most of the action plans have recognised the need to set up a working group specific to that habitat or species. Most of these are already in place and many have been functioning successfully for many years. Working groups have proved to be an excellent medium for lead partners to co-ordinate



implementation, identify new threats and opportunities for their plans and to draw in new members with the required expertise.

The initial composition of the working groups may be indicated in the plans, but additional members are always needed and interested organisations are welcome and encouraged to contact the lead partner to get involved with the relevant Habitat or Species Action Plan.

4.3 Monitoring

The MARS (Monitoring and Recording of Species) group of Richmond's Biodiversity Partnership will play a vital part in the monitoring process. Recording of species will indicate the success of whether targets detailed within the individual Species and Habitat Action Plans have been met, and if not to identify solutions as to why these targets have not been met, so that appropriate revisions can be made to the LBRuTBAP.

Any interested individual, group or organisation who would like to get involved in monitoring species should either get in touch with the lead of the relevant Species Action Plan or the Chair of the Richmond Biodiversity Partnership.

Monitoring of habitats and species will indicate whether the aim to reverse the decline of priority habitats and species within LBRuT has been achieved. This will help review, update, as well as add or delete any Habitat or Species Action Plans.

4.4 Reporting and Review

The leads for each Habitat or Species Action Plan will monitor and record the progress of actions by specifying what has been achieved throughout the year. The leads will report progress to the Richmond Biodiversity Partnership at quarterly meetings. The leads will also report successes and failures as well as plans for the forthcoming year by producing summary reports on an annual basis. This information will be collated annually by SWLEN, and reported to all the partners and the public every year in a LBRuTBAP Annual Report.

Analysis and evaluation of the nature conservation resource is clearly a major component of the LBRuTBAP. Any collated information will be stored in a database at borough level and forwarded to Greenspace Information for Greater London (GIGL), which is London's records' centre that collates and manages all data for London's green space. This information will also be shared with the National Biodiversity Network (NBN).

5. References

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6. Abbreviations

BAP: Biodiversity Action Plan BCT: Bat Conservation Trust Scheme CBD: Convention on Biological Diversity DEFRA: Department for Environment, Food and **Rural Affairs** ET: Environment Trust EU: European Union FC: Forestry Commission GIGL: Greenspace Information for Greater London GLA: Greater London Authority HAP: Habitat Action Plan LA: Local Authority (LBRuT) LBAP: Local Biodiversity Action Plan Network LBG: London Bat Group LBP: London Biodiversity Partnership LBRuT: London Borough of Richmond upon Thames LBRuTBAP: London Borough of Richmond upon Thames Biodiversity Action Plan LNHS: London Natural History Society Police) LTOA: London Tree Officers' Association

LTWGS: London Tree and Woodland Grant LWT: London Wildlife Trust MARS: Monitoring and Recording of Species NBMP: National Bat Monitoring Programme **NE: Natural England** PTES: People's Trust for Endangered Species **RBG: Royal Botanic Gardens Kew RBP: Richmond Biodiversity Partnership RYOT: Richmond Youth Offending Team** SAP: Species Action Plan SDG: Sustainable Development Goals SWLEN: South West London Environment TCV: The Conservation Volunteers TLS: Thames Landscape Strategy **TRP: The Royal Parks** TW: Thames Water **UN: United Nations** WLO: Wildlife Liaison Officer (Metropolitan WWT: Wildfowl and Wetlands Trust



19





Richmond upon Thames

Habitat Action Plan

Ancient and Veteran Trees



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"Those grey, gnarled, low browed, knock kneed, bowed, bent, huge, strange, long armed, deformed, hunch backed, misshapen oak men that stand waiting and watching, century after century."

(Francis Kilvert, Diary of F. Kilvert, 1876)

1. Aims

- To develop a strategic approach to the protection and management of the London Borough of Richmond upon Thames's (LBRuT) ancient and veteran trees.
- To promote and raise awareness of the value of ancient and veteran trees and secure the involvement of the LBRuT populace in their conservation.

2. Introduction

Ancient and veteran trees form a valuable part of our heritage, in historic, cultural and ecological terms. These attributes are now being recognised, along with their aesthetic appeal and landscape contribution.

The term 'veteran' tree encompasses a wide range of trees, which display attributes associated with late maturity such as large trunk girth and trunk hollowing. The term 'ancient' refers specifically to the age class of a tree, describing the stage of development in the ageing process beyond full maturity. Whilst all veteran trees are potentially of cultural and ecological value, ancient individuals are a key indication that there is likely to have been a continuity of veteran tree/deadwood habitat and management at a site. (JNCC, 2006)



For the purposes of this Plan, a veteran tree can be defined as 'a tree that is of interest biologically, culturally or aesthetically because of its age, size or condition' (Read, 2000). The term veteran is used throughout to describe all trees that have markedly ancient characteristics, irrespective of chronological age and the term ancient is applied specifically to trees that are ancient in years.

Ancient and veteran trees can be found throughout LBRuT:

- In areas of historic deer parks, which includes Richmond and Bushy Parks, Home Park and Hampton Court Palace;
- In woodlands, which includes The Copse in Ham and Petersham Common; and
- In urban landscapes and relics of former land boundaries, which includes the residential gardens in Hampton, the playing fields at Barn Elms and the willows along the River Crane.

It is not just the trees that are important and valuable but the enormous diversity of other species, which they support, such as birds, bats, small mammals, fungi, lichen, mosses, beetles and in particular, saproxylic invertebrates. Many of these species are dependent on the dead or decaying wood habitat that is associated with ancient and veteran trees, for food and shelter. For example, several species of rare fungus do not even appear until the tree reaches a mature age and condition, which highlights the importance and value of ancient and veteran trees for biodiversity.

3. Current Status

Data on the condition and number of veteran trees across LBRuT is not known. There is a complete record of all veteran trees of all species in Richmond and Bushy Parks, which is reviewed annually by The Royal Parks. A veteran tree survey was also carried out in Home Park and Hampton Court Palace in 2012. The remainder of the borough also supports a large number of veteran trees and it is recognised that a systematic approach to surveying and recording the whole resource across the Local Authority's conservation areas and designated conservation sites is needed. The details of individual trees that have been protected by a Tree Preservation Order are held on Richmond Borough Council's database.

4. Specific Factors Affecting the Habitat

The following list comprises the threats to the number and condition of ancient and veteran trees.

4.1 Implementation of risk-adverse management without due regard to veteran trees and their value

This is particularly relevant to ancient and veteran trees in built-up and urban areas where the trees and/or decaying wood are often removed in case of tree failure. Whilst health and safety is of paramount importance and landowners have a legal duty of care to take all reasonable steps to identify possible hazards and remove them, there is often an element of over caution and risk adverse management without due regard to the value of these trees. In residential areas, dead wood is also removed as a consequence of 'over tidying' by owners. A balance however needs to be gained and this can be achieved by gaining professional advice from qualified arboriculturists and having systems in place to undertake the required inspections and carry out any remedial or identified work that may be required.

4.2 Pest and diseases

There are a number of potentially damaging pests and diseases currently within Britain, many of which have entered from abroad. Some examples are oak processionary moth, bleeding canker of horse chestnut and ash dieback, which are virulent, fast-spreading and unstable in new environments. Such pests and diseases are significantly affecting a number of trees across the borough, including the ancient and veteran trees, their management and future sustainability.



Information and advice can be gained from the Forestry Commission on best practice guidance in terms of control, regulations and requirements to reduce the spread of many pests and diseases.

4.3 Climate change and extreme weather events

Climate change and extreme weather events such as drought, high rainfall and high winds/storms can all impact upon ancient and veteran trees and weaken a tree's resistance to pathogens. Climate change and a warmer climate can make it easier for new pests and diseases to get established, and for existing ones to become a bigger problem, for example by breeding more frequently. Many species that also rely on the ancient and veteran trees for their survival appear to be less tolerant of climate change and such extreme weather events.

4.4 Inappropriate management

Veteran trees require specialist care and therefore inappropriate management, or lack of, can lead to a threat to the long term retention of veteran trees. There are many actions that can damage trees including compaction of the roots by vehicles and/or people. The area around a veteran tree needs to be cared for as well as the tree itself. In order to ensure the sustainability and retention of trees, a broad diversification of tree species and age is needed to guard against inappropriate management as well as the possibility of devastation by natural disasters and pests and diseases.

4.5 Visitor pressure and events

All trees are sensitive to root disturbance, which can be caused from development, construction, landscaping as well as high numbers of people and vehicles. The effects of these changes on trees can be quite devastating and can take many years to become fully visible. Interesting sites and big events can attract large numbers of visitors and spectators, which can put huge pressure upon ancient and veteran trees. The area around the tree as well as the tree itself needs to be safeguarded and this can be achieved by erecting temporary or permanent fencing to reduce the impact upon the roots and to keep visitors away.

4.6 Lack of replacement trees to ensure the sustainability of the veteran tree population

As veteran trees are lost due to natural decay processes or removal, there is a lack of younger trees being planted as well as maintenance of semi-mature and mature trees (that have appropriate size, form, vigour and decay conditions to reach the ancient status) to replace them, which is leading to an imbalanced age structure. Losing veteran trees also results in a loss of dead wood habitat and associated species. The majority of ancient and veteran trees within the borough are from a small selection of species and are even-aged, which highlights the vulnerability of them to threats. To encourage a new generation of veterans that are of local provenance, it is important to take seeds and cuttings from existing ancient and veteran trees whilst implementing appropriate traditional management techniques on selected young, semi-mature and mature tree stock. This will help to ensure the long term sustainability of the ancient and veteran tree population.

4.7 Fires

A number of ancient and veteran trees are lost as a result of fires, whether accidental from BBQs or planned from vandalism or anti social behaviour. Older trees often provide large cavities and therefore ideal 'hiding places' to light a fire, have a BBQ or simply cause issues to the health and wellbeing of trees. It is often hard to prevent such incidents, as they take place 'out of working hours' and without prior knowledge, which makes it hard to enforce any legislation but posters and signs should be erected to inform members of the public of the 'dos and don'ts' where possible.



5. Current Action

5.1 Legal status

A UK Habitat Action Plan for Wood-Pasture and Parkland was reviewed in 2011, as it is considered a priority habitat, which is threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). However a plan was not produced specifically for ancient or veteran trees. Some individual ancient and veteran trees are covered by Tree Preservation Orders, for their amenity value and many of these trees support species, such as bats and stag beetles that are protected under the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CROW) Act 2000, the Natural Environment and Rural Communities (NERC) Act 2006, and by the Conservation of Habitats and Species Regulations 2010.

Regionally within London, the London Biodiversity Partnership produced an audit on 'Open landscapes with ancient/old trees', as it was considered an important habitat in London. However, there is no working group or Habitat Action Plan with set and agreed targets at the present time but organisations are strongly encouraged to take ownership by taking action to protect and enhance the existing habitat.

Locally, across the borough a number of veteran trees are protected by Tree Preservation Orders under The Town and Country Planning (General Permitted Development) (England) Order 2015 for their amenity value. Trees are also taken into consideration in the determination of planning applications. Many veteran trees receive protection because they are located within sites, which have conservation designations such as a Site of Special Scientific Interest (Richmond, Bushy & Home Parks), a National Nature Reserve and Special Area of Conservation (Richmond Park) or a Site of Borough Importance for Nature Conservation (The Copse in Ham).

5.2 Mechanisms targeting the habitat

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

5.2.1 The Royal Parks and Historic Royal Palaces

The Royal Parks (Richmond and Bushy Parks) and Historic Royal Palaces (Hampton Court Palace and Home Park) manage the majority of ancient and veteran trees in the borough. All the veterans are mapped in the Royal Parks, are inspected and have individual work and management recommendations. In Home Park, a survey and condition assessment was carried out in 2012. The veteran trees are managed appropriately and in line with best practice and consent from Natural England.

5.2.2 Local Planning Authority

The Local Authority planning system affords protection for veteran trees in the borough by means of Tree Preservation Order's and Conservation Areas.



6. Flagship Species

There are many flagship species, which are characteristic of ancient and veteran trees in LBRuT so the list below is by no means exclusive:

Common Name	Latin Name	Brief Description		
Saproxylic Invertebrates/Beetles	Lucanus cervus	Larvae requires dead wood to feed in for up to 7 years before emerging as adult beetle		
Stag beetle	Ampedus cardinalis	A very rare beetle develops in the red rotten heartwood of old oaks and feeds on larvae of other invertebrates		
Bats	Plecotus auritus			
Brown long-eared	Nvctalus noctula	Many bat species roost in the cracks and crevices of		
Noctule	Pipistrellus pyamaeus	mature, ancient and veteran trees		
Soprano pipistrelle				
Fungi	Fistulina hepatica	Slowly degrades the heart wood creating ideal nesting habitats and food source		
Beef steak fungus	Piptoporus quercus	A heartwood rotting species that requires exposed, seasoned wood of mature or decaying veteran oaks		
<u>Birds</u>		A species likely to be seen on veteran trees during the		
Great spotted	Dendrocopos major	day		
Woodpecker Tawny owl	Strix aluco	Nests in suitable natural cavities and holes in large trees		
Epiphytes		There are many mosses, lichens, liverworts, algae and micro-fungi associated with older trees.		
Lichen	Lecanora albellula f.albellula	A signature species of quality standing deadwood habitat		

7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves

Generic Actions (across all SAPs and HAPs)				
Action	Target Date	Lead	Other Partners	
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS	
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA	



Generic Actions (across all SAPs and HAPs)					
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	2019	LA, SWLEN, Working groups	GLA, NE, WLO		
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS		
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species that have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups		
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP		
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media		
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS		
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups		
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups		

Specific actions targeting ancient and veteran trees					
Action	Target Date	Lead	Other Partners		
APR01 - Maintain records and input onto	Annual	TRP			
Ancient Tree and Woodland Forums	Annuai	HRP	LA/ FONCE		
APR02 – Obtain records from Ancient Tree Forum and integrate veteran tree data into the	Annual	LA	FORCE		
existing Tree Preservation Order system					
APR03 – Set up a Richmond Tree Warden	2022	ΙA	SWLEN/FORCE/		
Scheme or similar scheme to focus on the	2022		FoBC/FBHP		



Specific actions targeting ancient and veteran trees					
surveying of ancient and veteran trees in the London Borough of Richmond upon Thames					
APR04 – Survey and map the existing population of ancient and veteran trees in LBRuT.	2022	LA	FORCE		
APR05 – Implement appropriate veteran tree management	Annual	LA	TRP / HRP		
APR06 – Investigate possible sites and locations to set up a nursery for native veteran seed stock	2022	HRP	TRP / LA / FoBC		
APR07 – Collect seeds and cuttings from native veteran trees to establish a native veteran tree nursery	2022	TRP HRP	FoBC / RBGK / LA		
APR08 – Produce a leaflet on the value and importance of ancient and veteran trees across the borough to raise awareness	2022	TRP, HRP	LA / FORCE		
APR09 – Publicise and celebrate ancient and veteran trees and traditional management techniques at 5 public events	Annual	TRP, HRP, LA	FORCE / TCV		
APR10 – Share best practice and guidance on pests and diseases	Annual	TRP, HRP, LA			

8. Relevant Action Plans

Local Plans

Broadleaved Woodland, Acid Grassland, Bats, Song Thrush, Stag Beetle.

London Plans

Woodland, Open Landscapes with Ancient/Old trees, Parks, Private Gardens, Churchyards and Cemeteries.

National Plans

Lowland Wood Pasture and Parkland, Stag beetle.

9. References

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10. Abbreviations

BAP: Biodiversity Action Plan	LBG: London Bat Group
BCT: Bat Conservation Trust	LNHS: London Natural History Society
CROW: Countryside and Rights of Way Act	LTWGS: London Tree and Woodland Grant
DEFRA: Department for Environment, Food	Scheme
and Rural Affairs	LWT: London Wildlife Trust
FBHP: Friends of Bushy and Home Parks	NE: Natural England
FC: Forestry Commission	NERC: Natural Environment and Rural
FoBC: Friends of Barnes Common	Communities Act
FORCE: Friends of the River Crane	RBP: Richmond Biodiversity Partnership
Environment	RBGK: Royal Botanic Gardens Kew
GA: Generic actions	SAP: Species Action Plan
GIGL: Greenspace Information for Greater	SWLEN: South West London Environment
London	Network
GLA: Greater London Authority	TCV: The Conservation Volunteers
HAP: Habitat Action Plan	TLS: Thames Landscape Strategy
HRP: Historic Royal Palaces (Hampton Court	TRP: The Royal Parks
and Home Park)	WLO: Wildlife Liaison Officer (Metropolitan
JNCC: Joint Nature Conservation Committee	Police)
LA: Local Authority (LBRuT)	WWT: Wildfowl and Wetlands Trust

11. Contact

The lead organisation for this Habitat Action Plan is The Royal Parks, Richmond Park.

Address: The Royal Parks, Richmond Park Office, Holly Lodge, Richmond Park, Surrey, TW10 5HS.

Tel: 0300 061 2200

E-mail: Richmond@royalparks.org.uk



Richmond upon Thames

Habitat Action Plan

Broadleaved Woodland



Mixed Oak Woodland, Ham Common Woods © Oliver Whaley

"Signals abound that the loss of life's diversity endangers not just the body but the spirit.....The ethical imperative should therefore be, first of all, prudence. We should judge every scrap of biodiversity as priceless while we learn to use it and come to understand what it means to humanity."

(Edward O. Wilson 1992)

1. Aims

- Establish a working group to develop a strategy for the site protection and management of broadleaved woodland in the London Borough of Richmond upon Thames (LBRuT).
- Conserve and enhance woodlands and woodland corridors, including hedgerows and scrub.
- Encourage woodland research, education and promote public awareness.
- Ensure biodiversity is conserved through appropriate management and species mapping.

2. Introduction

The common and scientific names of trees are given in the appendix.

This Habitat Action Plan (HAP) is part of a suite of Habitat and Species Action Plans specific to LBRuT. It works alongside the Ancient and Veteran Trees HAP.

LBRuT is nationally important for its broadleaved woodland biodiversity. At the heart of the borough is Richmond Park which is a National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI) and European Special Area of Conservation (SAC). In addition, LBRuT includes Bushy and Home Parks, also SSSI's, and the Royal Botanic Gardens Kew, which is a World Heritage Site.



It is assumed that firstly, broadleaved woodland biodiversity outside Richmond Park, and that within, are interdependent. Secondly, that broadleaved woodland provides a very high benefit for people and a high biodiversity at a relatively low monetary cost.

As with other areas of London, the last three decades have generally seen an increase in woodland and scrubland. Indeed, LBRuT is fortunate to have 396 ha (978 acres) of native woodland - the fourth highest of the London boroughs - and 78 ha (192 acres) of non-native woodland - the third highest of the London boroughs.

LBRuT's woodland harbours several nationally scarce woodland invertebrates and fungi, including some UK BAP Priority species. As well as providing for biodiversity, trees perform useful roles such as improving air quality, absorbing carbon dioxide, generating soil, soaking up noise pollution, ameliorating hot summers and providing shade and play areas for children.

However, without management such as grazing or cutting back, woodland can colonize acid grassland heaths, wildflower meadows and railway land, which can mean a gain of woodland at the loss of rare species or other habitats. Today many would consider that this loss is a fair exchange in a city for the extra services offered by trees. Equally, others believe that open spaces like heaths, should remain open and not be encroached by woodland. Clearly the answer is a trade-off that should not allow the loss of biodiversity. This means that appropriate woodland management is very important to achieve the UK BAP goals.

Habitat definition

Broadleaved woodland is usually defined as any woodland in which more than 80% of its trees are broadleaved species. In the UK these are native species such as ash, hazel, oak and field maple which are common inLBRuT, and in southern Britain, beech and small-leaved lime which are far less common locally.

To properly manage broadleaved woodland one must distinguish between native and non-native trees. A generally accepted definition of native trees (see full list in Appendix) are trees that colonized the British Isles after the last ice age before Britain was isolated from the rest of Europe by rising sea levels. Non-native trees (see Appendix) on the other hand have been introduced recently. Because wildlife are not as well-adapted to these trees, they support lower biodiversity than the native trees do. However, sycamore (*Acer pseudoplatanus*), that is common in LBRuT was thought to have been introduced in the 15th century to Britain and serves as host to many native species, whereas native holly, also common in LBRuT, serves as host to few organisms. Both species play little known roles in woodland ecology.

In Britain the term ancient woodland is defined as woodland at least 400 years old, and which may have been around as far back as last ice age (about 11,000 BP). As such, this woodland usually has a considerably higher biodiversity than more recent woodland, and serves to emphasize that woodland cannot be recreated simply by planting trees, but that successional ecological stability takes hundreds of years.

According to the London Ecology Unit, no ancient woodland survives in LBRuT, but wood pasture and some wet woodland have demonstrable ancient credentials. In addition, Richmond Park contains 400 veteran oaks that predate the enclosure of the park about 350 years ago.

Woodland habitats need to be linked up

Many small woodland habitats have been lost to urban development even in recent years. These 'micro-sites' perform important roles for movement of species between the other larger woodland sites. When considering appropriate measures for conservation of biodiversity, it is important to appreciate that habitats do not exist in isolation and that the more 'green corridors' there are linking different habitats, the more successful conservation of biodiversity will be. Therefore, the proximity and interaction of habitats and biodiversity adjacent to the borough must also be considered. In



LBRuT these include: the SSSI of woodland / tidal flood meadow of Syon House and the wooded LNR of Isleworth Ait (both in the London Borough of Hounslow). These are separated by the River Thames from the Old Deer Park and RBG Kew. Also important are the locations and biodiversity of Wimbledon Common, Hounslow Heath and the wildlife corridor and sites of Metropolitan importance such as the River Thames and its tributaries. The scientific understanding of the interrelationships of habitats and species is still developing. Precautionary management considerations might include seed dispersal and germination mechanisms, migration routes, disease transmission, road noise and climate change.

Broadleaved woodland structural diversity

LBRuT is fortunate to have a wide range of woodland habitats. The high structural diversity of new oak forest (colonizing heath at Ham and East Sheen) and wet willow woodland (riparian Thames and river islands), is explained to some extent by the smaller-leaved species facilitating good light penetration. In contrast, the closed canopy of large-leaved sycamore or horse chestnut woodland, for example, found on some islands and railway embankments, in the summer excludes much of the light. This may not benefit the ground flora, but serves as an important habitat for many invertebrates, including the millipede (*Cylindroiulus Iondinensis*) and the brown wood ant (*Lasius brunneus*) on Eel Pie Island, and for rare snails like the two-lipped door snail (*Lacinaria biplicata*) in several riparian sycamore woodland localities.

Woodland with good structural diversity is one that contains herb, canopy and subcanopy vegetation layers of different heights and ages. Woods with gaps in the canopy that allow sunlight to reach the ground probably support a much greater range of plants and animals than a closed canopy with trees of different height and shade. Sunny sheltered rides, glades and clearings provide for biodiversity and people. Features such as ponds or tidal flooding within woods also increase the number of species present.

In the past, natural events such as storms, disease and fire, together with the activities of animals like beavers, created open spaces within woodland, while grazing and browsing by deer and wild cattle delayed the succession of trees and shrubs and kept the gaps open. Early woodland management systems by man, such as coppicing, created and mimicked conditions for many species over centuries. However, the widespread cessation of such management activities in the 20th century has led to the decline and loss of a number of species that require diverse structure and more open conditions.

3. Current Status

3.1 Woodlands in London Borough of Richmond upon Thames

LBRuT is about 11 % wooded, that is about 474 hectares and more than any other neighbouring borough.

The majority of woodland is found in the Royal Parks, Petersham Common, Ham Common, East Sheen Common, Royal Botanic Gardens Kew, The Old Deer Park, Barnes Common and Ham Common and along the Thames and its islands, as well as on railway land.*

Within the borough, as with other areas of London, broadleaved woodland is on the increase. Either it has been allowed to regenerate, or as in the case of Sheen and Ham Common is in the process of a natural transition from heath to woodland. Several factors in the last 100 years have meant that the deflected succession, formerly carried out by grazing animals, like rabbits or horses, or other management, has drastically declined.

The borough broadleaved woodlands are very varied in composition partly due to the fact that most are between 40 - 200 years old and therefore are in many stages of regeneration.



In areas of woodland colonization like Petersham, Ham and Sheen Common a thriving mosaic of succession is found, with slopes, old drainage ditches and soil types contributing well to the habitat heterogeneity. In other areas, such as the parts of Ham Lands and several islands, sycamore dominates, often with unusual non-native trees such as swamp cypress and Chinese necklace poplar. Sycamore is considered as invasive, but without further research and given the 'natural' thinning mechanisms (such as sooty bark disease) provides perhaps an equally valuable contrasting habitat, albeit perhaps less aesthetic.

Particularly unusual habitats are the tidally flooded willow woodlands. The riparian wet woodland fragments are characterized by many willow species including natural hybrids, and often include elder and hawthorn. In the past, native black poplar and alder would have been more prevalent along the river, and found in stands, rather than today, where they are found as isolated individuals.

* Railway land woodland and scrub are currently mostly unrecorded.

3.2 Specific woodland habitats in London Borough of Richmond upon Thames

The key examples are as follows:

(i) Old Deer Park Flood Canal Wet Woodland

Mixed wet woodland and tidally flooded willow carr

Characterized by: Many willow species, hawthorn, elm, reedbeds (*Phragmites australis*), sedges (*Carex* sp.), cut grass (*Leersia oryzoides*) (Schedule 8 Countryside and Wildlife act 1981), including other taxa e.g. Two-lipped door snail (*Lacinaria biplicata*), violet ground beetle (*Carabus violaceus*).

(ii) Ham Common / East Sheen Common

Mixed oak woodland colonised heath

Characterized by: oak, honeysuckle, holly, dogwood, aspen, sallow (in depressions with yellow loosestrife (*Lysimachia vulgaris*)). With heath relics including: gorse, wavy-hair grass (*Deschampsia caespitosa*) and birch (a pioneer species now dying back).

(iii) Petersham and Ham Sea Scouts Tidal Willow Wood

Tidally flooded willow woodland,

Characterized by: strandline detritus rich in invertebrates, crack willow, pendulous sedge (*Carex pendula*), hemlock water dropwort (*Oenanthe crocata*), three-cornered leek (*Allium triquetrum*), inscrutable small-leaved elm species and 3 huge London planes with bat roosts.

(iv) Thames towpath and Island Woods

Riparian and Island tidally flooded Woods

Characterized by: sycamore, willow, poplar (including native black poplar) with strandline detritus rich in invertebrates, pendulous sedge (*Carex pendula*), hemlock water dropwort (*Oenanthe crocata*), Himalayan balsam (*Impatiens glandulifera*) and nesting heron (*Ardea cinerea*).

(v) Petersham Common Woods

Mixed escarpment ash / oak / hornbeam woodland

Characterized by: Tall ash, oak (*Quercus* spp.) and hornbeam with subcanopy field maple, bird cherry, Norway maple, dewberry (*Rubus caesius*).

Other types include: wood pasture, sycamore, willow / poplar, oak / birch, blackthorn / hawthorn scrub, elm thickets.



4. Specific Factors Affecting the Habitat

4.1. Habitat destruction and fragmentation through urban development

The largest cause of habitat loss is urban development. Fragmentation of habitat is a fundamental factor contributing to the loss of biodiversity, in that genetic exchange, and therefore species survival, is threatened. It also prevents necessary species migration due to factors such as resource depletion, population displacement, breeding or climate change.

4.2. Lack of management, or unsuitable management

Contractors and volunteers should have felling licenses that are assessed against the requirements of the UK Forestry Standard (1998), which takes into account biodiversity considerations. Good management should be appropriate in type, timing and extent. Bad and illegal practice includes, for example, chainsaw use in the bird breeding season or removal of hollow trunks that are usually bat roosts. If tree branches have to be removed they should be surveyed for bats. Often a naturally collapsing tree is the best self-management within woodland.

4.3. Loss of genetic integrity through replanting with stock of non-local provenance

Genetic research has allowed us to see that local stock are likely to be better adapted to local conditions, and therefore have a better chance of long-term survival. Imported stocks of native species may well introduce genetic erosion, weaknesses and bring in disease.

4.4. Climate change

After habitat loss, the effects of anthropogenic climate change are possibly the biggest threat to Richmond woodland biodiversity over the next 100 years, although the extent and precise effects on wildlife are difficult to predict, and we do not know the tolerance of many species.

Research is beginning to suggest that root mycorrhiza (fungal symbionts) that are adapted to the more stable subsoil conditions are not tolerant of climate change effects like drought or lack of frost. Beech trees are very sensitive to the effects of prolonged dry summers on native woodlands.

Research is also uncovering changes in woodlands dynamics and other subtle mechanisms. For example, it has been shown that competitive species such as holly are growing more extensively and rapidly, as subcanopy species, due to increasing number of frost-free days. As well as squeezing ecotypes and species, holly, unless managed, is likely to have a detrimental effect on woodland plant diversity, especially sub-canopy herbs, ferns, mosses and fungi, as well as preventing sapling germination.

In short, the evidence suggests that large changes are afoot and will undoubtedly affect the woodlands in Richmond in the coming years. It is important to monitor woodland for climate change impacts in the upcoming years, and the results of these studies should be incorporated into all further management plans and the development of woodland corridors.

4.5. Flood prevention measures, river control and canalisation disrupting natural hydrological processes within sites

4.6. Diseases and infestation

Generally tree diseases are a natural part of any ecosystem. However, there are more insidious diseases assisted perhaps by climate change and international trade, like: Dutch elm disease, sudden oak death (*Phytophthora ramorum*), beech bark disease – that is caused by a combination of an insect, the felted beech coccus (*Cryptococcus fagisuga*) and a fungal pathogen (*Nectria coccinea*); and sycamore sooty bark disease (*Cryptostroma*). Woodland should be monitored



carefully for these diseases including possible beneficial effects. For example, the natural thinning of sycamore and the dense stands of elm suckers - which left alone will eventually acquire the genetic capacity to become woodlands - certainly both have benefits for biodiversity.

The leaf roller moth (*Tortrix viridana*) is a major cause of defoliation of oak trees in LBRuT. This caterpillar can cause 80% defoliation by June, meaning the trees must produce new leaves, and with the consequent expenditure of energy there is a decrease in acorn production. However, the caterpillars serve as a good food source for birds and the moths for bats, both important mechanisms of bio-control.

4.7. Unnecessary removal of trees and dead wood - over-tidying

It is now well understood that deadwood is essential to the wellbeing of woodland, providing habitats for about 17% of the biota. In broadleaved woodland the insects and fungi associated with unhealthy or dead woodland trees are an essential and integral part of a woodland trees lifecycle and the ecosystem as a whole. In the past it was often assumed that deadwood should be removed from woodlands. This may have been for reasons such as for health and safety to the public, aesthetic and economic i.e. to make way for new plantings, etc. The ecological importance of dead, standing and fallen trees is increasingly being recognised as one of the single most important resources in any woodland - ancient or recent - and so deadwood should be retained wherever possible. In the last few years with the help of organizations like Natural England, The National Trust and the TCV, this appreciation has been understood and dead wood is often left in place. Richmond Park has a good established policy of leaving dead wood and crown-cutting limbs. Bushy Park has identified the need to conserve more dead wood. At an international level, World Wildlife Fund (WWF) calls on European governments and forest managers to help conserve biodiversity by increasing deadwood in boreal and temperate forests to as much as 20 - 30 cubic meters per hectare by 2030.

Up to a third of woodland insects, including a number of rare species, are dependent on dead wood. It is the substrate for a large proportion of fungi. For example, the oak polypore (*Buglossoporus pulvinus*) fungus, which is a UK BAP priority species and on Schedule 8 of the Wildlife and Countryside Act 1981, occurs in Richmond Park on the old oaks.

Dead wood is used by more than 200 species of fly and some 760 species of beetle, including the stag beetle (*Lucanus cervus*) which is becoming rare nationally, but for which Richmond is a stronghold. Dead wood also provides valuable nesting sites for birds, with one third of all woodland birds nesting in holes or cavities of dead trees. In Richmond, for example, nesting nuthatches can be seen in oak in East Sheen Common, treecreepers can be seen regularly on sycamore, and greater spotted woodpeckers benefit particularly from the maturing and dead birches found on Ham Common and in Richmond Park (Isabella Plantation for example).

Recent research has suggested that woodpeckers can be thought of as 'architects' of woodland providing 'housing' for species, in that they appear to be vectors for wood decay fungi, facilitating fungal entry to trunks and heartwood, after which a myriad of species can follow.

4.8. Pollution

Contrary to claims of forest decline, in most of Europe growth rate of trees is increasing. As well as changes in management practices, increased CO2 concentration, nitrogen deposition and changed climatic conditions are implicated. It has been shown that frost sensitivity has increased in some tree species with increasing air pollution.

Nitrogen deposition changes soil attributes and may have effects on mycorrhizal fungi and influence bryophyte communities. Air polluted with sulphur dioxide (SO2) has been detrimental to tree lichens since the industrial revolution, but such effects have been ameliorated by air quality control.


There is mounting evidence that a third runway at Heathrow would increase air pollution in the area. However, studies focus on the effects to humans and not on flora and fauna.

4.9. Introduction and/or colonization by invasive species

Species such as rhododendron are highly invasive on light soils (which predominate in the borough) and need rigorous control or good management as in Richmond Park. Sycamore, holm oak, holly, Norway maple, and cherry laurel may also crowd out more native species.

4.10.Lack of knowledge and information collation

A systematic approach to surveying and recording the whole resource is needed, as with the Ancient and Veteran Trees HAP. Railway lands woodlands and scrub need to be recorded and assessed.

The considerable biodiversity information that exists with groups and individuals in the borough has not been centralized - this BAP aims to redress this.

5. Current Action

5.1. Legal status of sites with broadleaved woodland and scrub

A number of mechanisms exist to ensure the protection and conservation of woodland and trees:

- The primary legislation is the Forestry Act (1967), which is administered by the Forestry Commission.
- All applications for felling licenses are assessed against the requirements of the UK Forestry Standard (1998) which takes into account biodiversity considerations.
- Tree Preservation Orders (TPOs) and those trees within residential Conservation Areas, designated by local authorities; prevent unnecessary damage to or felling of trees.
- Some sites have protective designations such as Sites of Special Scientific Interest (SSSI). Other designations are identified in local authority plans and highlight the importance of these areas within the planning process (listed below in Table 1).

Table 1: List of UK Site designations of broadleaved woodland within LBRuT,

N.B. Other important woodland sites exist without site designations

Site name	National Nature Reserve	World Heritage Site	Site of Special Scientific	Local Nature Reserve	Metropolitan Open Land	Metropolitan Green Belt	Site of Metropolitan Importance	Site of Borough Importance	Site of Local Importance
Acronym	NNR	WHS	SSSI	LNR	MOL	MGB	SMI	SBI	SLI
Barnes Common				X	X		X		
Barn Elms Playing Fields					X			X	



Bushy Park		Х		Х		Х		
Crane Corridor				x	x	x		
Crane Park Island			X	X	x			
Duke of Northumber- lands River					Ø			X
East Sheen Common				X		X		
East Sheen & Richmond Cemeteries	*			X				X
Fulwell Golf Course				x			x	-
Ham Lands			X	X		X		
Ham Common			x	X		X		
Hydes Field				х	х		х	
Kew Meadow Path				X			X	
Marble Hill Park				X				X
Occupation Lane Kew							X	
Orleans House Gardens				X				x
Ormond Bank					•			X
Palewell Common				X		X		
Pesthouse Common				X	*			X
Petersham Common				X		X		
Petersham Lodge Woods				X			X	
Richmond Park	X	x		x		X		

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(also SAC)							
Richmond Cemetery							X
Royal Botanic Gardens Kew	X		X		X		
Twickenham Junction Rough			x				x
Twickenham Golf Course			x			x	
The Cassel Hospital							x
The Copse Ham			x			x	
The Copse (Hampton Wick)			X				x
The Crane Corridor					x		
7 Thames wooded islands			x	x			
Twickenham Road Meadow						x	
Strawberry Hill Golf Course			x			x	

5.2. Mechanisms targeting the habitat

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

5.2.1. Richmond Native Big Tree Plant

(Mayor of London's Tree Planting Grants) - working with a minimum of 30 friends groups to plant native trees in nominated parks and open spaces across the borough, with an emphasis on long-lived and large canopy species to maximise the long-term benefits.

5.2.2. Woodland Grants Scheme

(WGS, Forestry Commission and DEFRA). Ham Common Woods, East Sheen Common and Barnes Common are currently under a Forestry Commission Woodland Improvement Grant (finishes 2019).



5.2.3. The Kew Society

The Kew Society green sub-committee monitors green spaces within Kew including broadleaved woodland such as the Thames towpath, Occupation Lane, and Pensford Field. The society has undertaken native tree planting, rubbish clearance and monitoring of habitat threats. Work is undertaken with Richmond Borough Council and TCV.

6. Flagship Species

These special plants and animals are characteristic of broadleaved woodland in LBRuT.

Lesser spotted woodpecker	Dendrocopos minor	The smallest and least common of the three British woodpeckers. They breed in broadleaved woodland, parks and orchards, and seem to like river valley alders or regenerating elm. They need decaying wood for nest sites as they make a new nest chamber each year. They are in rapid decline in the UK.
European alder	Alnus glutinosa	A specialist riparian or wetland tree. Shiny leaves and small cones. Has nitrogen fixing root bacteria (<i>Frankia</i> sp.). Some good examples have colonized the river revetment but not common in borough.
Native bluebell	Hyacinthoides nonscripta	Grows in established woodland. Subject to genetic erosion through hybridization with the Garden or Spanish bluebell (<i>H. hispanica</i>)
Treecreeper	Certhia familiaris	Small, very active tree bark specialist. It is speckled brown above and mainly white below with long, slender, down curved bill. BTO research suggests that it is in decline.
	Including	
Bats	<i>Pipistrellus</i> sp.	Winged mammals. Many bats use healthy hollow trees
	Noctule bat (Nyctalus noctula)	for winter and summer roosts.
Two-lipped door snail	Lacinaria biplicata	A spire shelled mollusc. Its habitat is soil surface (usually with ivy cover) of occasionally flooded riparian land in the shade of closed canopy woodland.
	Including stag beetle	
Beetles	Cardinal click beetles (Ampedus cardinalis)	felling of veteran oaks.
Oak	Quercus robur	Emblematic of LBRuT and one of the longest lived trees in the UK. It serves as host to more species of birds, bats and invertebrates than any other tree.
Purple hairstreak (butterfly)	Quercusia quercus	Dark wings flash iridescent violet purple. Only foodplants are oaks. Require undisturbed leaf litter and ground layer for pupation (leaf blowers are bad). Can be seen in hundreds flitting over oak tree crowns.



7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic Actions (across all SAPs and HAPs)						
Action	Target Date	Lead	Other Partners			
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS			
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA			
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO			
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS			
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups			
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP			
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online.	Annual	SWLEN	LBG, LWT, WWT, Local Media			
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS			
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups			



Generic Actions (across all SAPs and HAPs)						
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups			

Specific actions for broadleaved woodland						
Action	Target Date	Lead	Other Partners			
BLW01 – Map the distribution of all existing broadleaved woodland with ground truthing	2020	LA				
BLW02 – Carry out a survey of the condition of LBRuT's broad-leaved woodlands including the extent to which they are managed.	2021	LA				
BLW02 – Investigate woodland schemes or grants for sources of funding.	On- going	LA, SWLEN	FORCE, FoBC			
BLW04 – Evaluate current woodland SiNC designations and where appropriate provide evidence and support to LA for change to grading.	2021	Working Group	LA, NE			
BLW05 – Identify woodland heritage features within the borough, especially any at potential risk and suggest appropriate management for inclusion to management plans.	On- going	Working Group	LA			
BLW06 – Create a reference link that gathers information for best practice policies on woodland management, that managers can refer to.	2020	Working Group, SWLEN	LA, TRP, HRP			
BLW07 – Work with LA to ensure that woodland management plans are updated and include current best practice and sustainable working methods.	2019, 2023, 2028	Working group, LA				
BLW09 – Set up a Tree Warden Scheme through a citizen science project.	2020	SWLEN, working group	LA			
BLW10 – Following BLW01, identify any gaps in existing and potential woodland corridors and consider planting schemes to	On- going	SWLEN, ET	LA			
BLWR11 – Reduce the non-native species within woodlands. Start a programme of removing invasive tree species from woodlands, aiming to clear 10% per site per year, exceptions to this include protected species habitats.	On- going	LA	FoBC, FORCE			



Specific actions for broadleaved woodland					
BLW13 – Leave all standing dead wood in woodlands unless Health and Safety reasons dictate otherwise.	On- going	LA	FoBC, FORCE		

8. Relevant Action Plans

Local Plans

Ancient and Veteran Trees, Acid Grassland, Tidal Thames, Bats, Stag beetle.

London Plans

Woodland, Tidal Thames, Private gardens, Black Poplar native (*Populus nigra spp.betulifolia*), Bats, Mistletoe, Stag beetle, Churchyards & Cemeteries, Wasteland, Heathland.

Open landscapes with ancient/old trees habitat audit, Tidal Thames habitat audit, Private gardens habitat statement, Marshland habitat audit, Farmland Audit, Railway Linesides audit.

National Plans

Wet woodland, Lowland mixed deciduous woodland, Lowland wood-pasture, Ancient and/or species-rich hedgerows and parkland.

Bullfinch (Pyrrhula pyrrhula), Stag Beetle (Lucanus cervus), Cut-Grass (Leersia oryzoides).

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9. Abbreviations

BAP: Biodiversity Action Plan BCT: Bat Conservation Trust BTO: British Trust for Ornithology DEFRA: Department for Environment, Food and **Rural Affairs** FC: Forestry Commission FoBC: Friends of Barnes Common FORCE: Friends of the River Crane Environment GA: Generic actions GIGL: Green space Information for Greater London GLA: Greater London Authority HAP: Habitat Action Plan HRP: Historic Royal Palaces (Hampton Court and Home Park) LA: Local Authority (LBRuT) LBG: London Bat Group LNHS: London Natural History Society LNR: Local Nature Reserve LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust MGB: Metropolitan Green Belt MOL: Metropolitan Open Land

NE: Natural England NNR: National Nature Reserve **RBP: Richmond Biodiversity Partnership** SAC: Special Area of Conservation SAP: Species Action Plan SBI: Site of Borough Importance SINC: Site of Importance for Nature Conservation SLI: Site of Local importance SMI: Site of Metropolitan importance SSSI: Site of Special Scientific Interest SWLEN: South West London Environment Network TCV: The Conservation Volunteers TLS: Thames Landscape Strategy **TPO: Tree Preservation Orders** TRP: The Royal Parks WHS: World Heritage Site WLO: Wildlife Liaison Officer (Metropolitan Police) WWF: World Wildlife Fund WWT: Wildfowl and Wetlands Trust

10. Contact

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Appendix

List of tree and shrub species that are <u>native</u> (or probably so) to LBRuT:

Alder Alnus glutinosa Alder Buckthorn Frangula alnus Ash Fraxinus *excelsior* Aspen Populus tremula Beech Fagus sylvatica Birch, Downy or Brown Betula pubescens Birch, Silver Betula pendula Bird Cherry *Prunus padus* Blackthorn Prunus spinosa. Black Poplar, (native) Populus nigra var betulifolia Broom Cytisus scoparius(?) Crab Apple Malus sylvestris Elder Sambucus nigra Elm, English Ulmus procera Elm, Wych Ulmus glabra Elm, hybrids with U. minor? Ulmus sp. Dogwood *Cornus sanguinea* Field Maple Acer campestre Gean, or Wild Cherry Prunus avium Gorse. Common Ulex europaeus Hazel Corylus avellana Hawthorn, Common Crataegus monogyna Hawthorn, Midland Crataegus laevigata Holly *llex aquifolium* Hornbeam Carpinus betulus. Lime. Small-leaved Tilia cordata Oak, English Quercus robur Oak. Sessile Quercus sessilis Privet, Wild Ligustrum vulgare Rowan Sorbus aucuparia Spindle Euonymus europaeus Willow, Crack Salix fragilis Willow, Goat S. caprea - also known as Great Sallow Willow, Grey S. cinerea - also known as Grey Sallow. Willow, White S. alba Yew Taxus baccata

Sweet Chestnut, Grey Poplar, Damson and Bullace are usually treated as 'honorary natives', i.e. were brought here by people but have naturalised in historic times. The hybrid known as Common Lime & Weeping Willow are also often accepted as honorary natives too.

Native status is ascertained by analysis of the pollen content of post-glacial deposits.





List of tree and shrub species that are <u>not native</u> to the British Isles, but which are known to naturalize within the wilder habitats of LBRuT:

Amelanchier Amelanchier spp. American Oak Quercus rubra Summer Lilac Buddleia davidii Cherry Laurel *Prunus laurocerasus* (more correctly Laurel Cherry) Cherry Plum Prunus cerasifera Copper Beech Fagus sylvatica purpurea Cotoneaster Cotoneaster sp. Hybrid Apples Holm Oak *Quercus ilex* Honey Locust Robinia pseudoacacia Horse Chestnut Aesculus hippocastaneum Indian Horse Chestnut Aesculus indica Norway Maple Acer platanoides Plane, London *Platanus x hispanica* Plane, Oriental P. orientalis Poplars *Populus* sp. not those listed under native. Rhododendron Rhododendron ponticum Turkey Oak Quercus cerris Swamp Cypress Taxodium distichum Swedish Whitebeam Sorbus intermedia Snowberry Symphoricarpos albus Sycamore/ Great Maple Acer pseudoplatanus

List of tree and shrub species that are considered invasive in the British Isles:

Tree of Heaven	Ailanthus altissima
Snowberry	Symphoricarpos albus



Richmond upon Thames

Habitat Action Plan

Hedgerows



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"Love thy Neighbour; yet don't pull down your Hedge."

(Benjamin Franklin, Poor Richard's Almanack, 1754)

1. Aims

- Conserve and enhance hedgerows within the London Borough of Richmond upon Thames (LBRuT), using an appropriate management system that will benefit the wildlife and local residents.
- Raise public awareness and appreciation of the habitats ecological value.
- Distinguish which hedgerows can be deemed to be ancient or species-rich habitats, if any.
- Identify more of the habitat's flagship species of flora and fauna.
- Identify new suitable sites for planting of hedgerows.

2. Introduction

Hedgerows are man-made structures of immense biodiversity that form part of our national historic, cultural and landscape heritage. Hedgerows are defined as a row of shrubs or bushes that can have trees within, typically bordering an area of land, pathways, roads or embankments. Their use dates back to before Roman time as a means of marking out land ownership and fencing in livestock. At the moment there are roughly 450,000 km of hedgerows within Britain; before modern farming techniques, the increase of housing, and transport links, hedgerows would have seemed to have connected the whole of the United Kingdom together.



The UK BAP defines two types of significant hedgerows that need protection:

- Ancient hedgerows that were in existence before the Enclosures Acts passed between 1720 and 1840, giving landowners the option to add large areas of common land to their estates, and
- Species-rich hedgerows containing five or more native flora species along a 30 metre stretch.

Those that are found within or surrounding a residence garden or house are not included within this Habitat Action Plan (HAP).

The myriad of species that thrive on a hedgerow's unique ecosystem consists of evergreen and deciduous flora such as holly and hawthorn, common garden and wild flowers, insects, arachnids, birds and mammals. Examples of animals found in hedgerows include but are not limited to beetles, butterflies, moths, song thrushes, blue tits, hedgehogs, bats, shrews and foxes. This diversity of flora and fauna means that hedgerows are in the unique position of containing 47 species that are of environmental concern within the UK, 13 of which are also globally threatened species.

In addition hedgerows can be seen, like streams and rivers, as natural corridors for species of flora and fauna to disperse between different areas of ecological significance, making them an important factor within residential and industrial areas linking parklands, woodlands, grasslands and commons together.

Another advantage is that hedges act as natural barriers to adjacent habitats, protecting them from wind, pollution, noise and intruding human activities. Hedgerows prevent soil erosion and water runoff, bring wildlife and idyllic greenery to urban areas and conceal signs of delapidation (i.e., graffitistained walls, wasteland, etc.) from visitors.

3. Current Status

Since 1945 there has been a sharp decline in the amount of hedgerows throughout the UK, with an annual net loss of 5% due to their removal and neglect.

A systematic survey to define the amount and total length of hedgerows within the LBRuT, and to determine which of these are worthy of being classified as ancient or species-rich hedgerows, is yet to be carried out. It is also important to note that the speculation about what species are to be found within hedgerows in LBRuT can be made, however, a more extensive survey is needed to determine which are actually present.

Areas that have hedgerows within the borough include churches, cemeteries, allotments, the Royal Parks, railway and road embankments, golf courses, parks and commons.

4. Specific Factors Affecting the Habitat

4.1 Lack of knowledge

The significant diversity that is held within these ecosystems needs to be centralised through assessment and sharing between groups and individuals in the borough. This information should include the total mass length and condition of ancient and species-rich hedgerows, the quantity of hedgerows holding ecological significance but not fitting either description, and a more detailed list of the variety of flagship species that can be found.

4.2 Poor management techniques

4.2.1. Removal: Hedgerows have been part of the British environment for hundreds of years, but unfortunately their removal in favour of fences or walls is a practice that has gained popularity since



the 1940s. Not only has this caused the destruction of these valuable ecosystems, but also fragmented section of previously continuous habitat inevitably leading to a reduction in diversity.

The trend towards the removal of dead wood, valuable to saproxylic communities such as fungi and insect larvae, has also increased and led to further reduction in the biodiversity of these ecosystems.

4.2.2. Neglect of hedgerows is also of concern. When hedgerows are not correctly maintained they can fall victim to invading plants such as brambles and weeds or non-native species such as snowberry, buddleia and cherry laurel spreading from gardens. When these species take hold they thrive within the hedgerow habitat, outcompeting the desired hedgerow species and even leading to the spread of disease.

When hedges are left to become entangled and overgrown they tend to attract the build-up of litter and pollution, a practice that is unsightly and may attract vermin. In addition, the dumping of grass cuttings or material chippings can affect the growth of flowers and other plants that thrive at the base of a hedgerow.

4.2.3. Wrong timing: The art of felling and coppicing trees and hedges may bring about rejuvenated growth with an increase in fruit, berries and nuts, but when these actives are done at the wrong time of year (spring and summer) food needed for hibernation will not appear during the autumn months and drastically affect the ecology of a hedgerow habitat.

4.2.4. Noise and use of pesticides: Leaf blowers are another popular tool for environmental management, but their use in close proximity to a hedgerow can disturb the underlying leaf litter and habitat. The use of pesticides, herbicides and fertiliser predominantly upon farmland or in parkland constitutes another great threat to the ecology of hedgerows. Farmers and groundskeepers are aware that undermanaged hedgerows can be a source of pests and weeds and are therefore more likely to target these habitats for treatment, negatively impacting their natural flora and fauna.

4.3 Urbanisation

4.3.1. The increase of housing and businesses has led to the removal and fragmentation of lengthy hedgerows that could well have been ancient or rich in species. Because the majority of recent urbanisation would have happened before any legislation was introduced to protect hedges, we cannot be sure, but in all likelihood we already will have lost large corridors that historically would have connected areas of ecological significance in LBRuT and other boroughs.

4.3.2. For public safety and to ease congestion many pathways and roads have been widened. Even when hedgerows survive these operations, the additional concrete can cut of the root systems below ground, preventing effective drainage and lead to stagnant water putrefying the roots. The laying or maintenance of cables and pipes causes similar problems.

4.4 Household proposals

Household owners sometimes have certain hedges and trees removed or felled due to them shading their dwelling or blocking a desired view; however applications to do so are not always accepted.

5. Current Action

5.1. Legal Status

The Wildlife and Countryside Act of 1981 (as amended) declared the removal of hedgerows containing nesting birds to be illegal, and in 1990 the Town and Country Planning Act gave protection to trees found within hedgerows. In 1995 the Environment Act introduced the control and protection of hedgerows deemed to be of historical importance or species-rich and required land owners to seek permission from their local authority for the removal of a hedgerow.



This was followed by Hedgerow Regulations in England and Wales in 1997 which stated that hedgerows stretching over twenty meters in the countryside, on common land, on protected land, being used for agriculture, forestry or the breeding of animals should not be removed. Within LBRuT this includes many areas like Kew Gardens, Richmond and Bushy Park, Barnes Common, Crane Park and Ham Lands.

5.2. Mechanisms Targeting the Habitat

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

The introduction of the Environment Act in 1995 has brought about the protection of important hedgerows in Britain. So far however, no hedgerows in LBRuT have been deemed as important, though many have gained status of protection due to being in areas of importance. Richmond Park is a SSSI and a SAC, Barnes Common and Ham Lands are two of many LNR's in the borough and they also fit under the conservation status as SMIs. Other conservation status found within the borough include SBIs and SLIs.

Volunteer work on the coppicing, planting, trimming and laying of hedgerows is a common occurrence during the winter months, mostly implemented by The Conservation Volunteers (TCV), Richmond group.

6. Flagship Species

THESE Special plants and animals are characteristic of heugelows in LDDU	These spec	ial plants and	d animals are	characteristic of	hedgerows in LBRu
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Song thrush	Turdus philomelos	Found throughout the UK, it is one of the smallest species of thrush at approximately 20-23 cm, and due to establishing breeding territories within late winter, they are one of the first birds to herald in the spring. They are a UK Red List Species of 'High Conservation Concern'.
Stag beetle	Lucanus cervus	Britain's largest terrestrial beetle thrives upon dead wood as part of its lifecycle. The larva will spend nearly seven years in the wood growing in size. Surprisingly London is a place of national significance due to its high stag beetle numbers.
House sparrow	Passer domesticus	The house sparrow has spread itself around the world, but has declined in numbers within the British Isles. It can be spotted all year round and lives within loose colonies of 10-20 pairs.
Bat species	Chiroptera	There are 6 known bat species within LBRuT including the Pipistrelle (common and soprano) the noctule, brown long-eared and Daubenton's. Hedgerows can give all these species areas to roost and feed.
Hedgehog	Erinaceous europaeus	Hedgerows provide these spiny mammals with shelter and help them to scourge for food. They can cover about two miles a day or more with the help of linked hedgerows.
Blackthorn	Prunus spinosa	Blackthorn is a deciduous shrub that grows up to five meters tall. It has spiny branches and cream coloured petals before the leaves in spring. This shrub is most commonly found as part of ancient hedgerows.



7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic Actions (across all SAPs and HAPs)						
Action	Target Date	Lead	Other Partners			
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS			
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA			
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	2019	LA, SWLEN, Working groups	GLA, NE, WLO			
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS			
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups			
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP			
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media			
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS			
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups			
GA10 – Require mitigation for increased urban surfaces in any development: green	Ongoing	LA	Working groups			



	Generic Actions (across all SAPs and HAPs)								
roof, urbar	green nization.	wall	etc.	to	offset	increased			

Specific actions for hedgerows					
Objective 1: To collate existing baseline data of hedgerow status within LBRuT.					
Action	Target	Lead	Other Partners		
	Date				
HR01 – SWLEN to make available all existing data it holds regarding hedgerow status and to use its Service Level Agreement with GiGL to access regionally held data.	2019	SWLEN, Working Group	TCV, GiGL		
HR02 – Identify individuals across LBRuT who may have additional data that could contribute to the hedgerow dataset – i.e. Bill Downey's surveys of blackthorn and English elm.	2019 (annual)	Working Group SWLEN	RBP		
HR03 – Utilise LBRuT data to see how many	2019	LA			
consented removals of ancient hedgerow and species species-rich hedgerow have been removed in recent years. Collect a time series of this data to identify rate of loss over time.	(annual)				
Objective 2: To identify methods of increstablish effective methods of storing and c	easing the communica	existing k ting this dat	nowledge base, and ta.		
HR04 – Investigate suitable platforms for storing and presenting data online.	2019	SWLEN			
HR05 – Create an online mapping system which can depict the current distribution and status of hedgerows across LBRuT.	2019 (Q3/Q4)	SWLEN	GiGL		
HR06 – Investigate the feasibility of a 'Hedgerow Safari'—a pan borough community- led citizen science programme across multiple boroughs that mobilises volunteers to explore the borough and survey existing hedgerow. A potential 'Hedgerow Safari'. This would need to be integrated integrate with the mapping system.	2019 (Q1/Q2)	TCV's Green Gym	SWLEN, ET, ZSL, Local Friends Groups		
HR07 – Establish who are the managers and owners of hedgerows within LBRuT.	2019	SWLEN			
HR08 – Standardise the methodology for land managers and project managers to report the quality and abundance of hedgerow on their land or the land they are working on. This	2019 (annual)	TCV	SWLEN		



would need to integrated with the online mapping system.					
Objective 3: To increase knowledge of the existing hedgerows within LBRuT, mapping their distribution and species diversity.					
HR09 – Equip all project and land managers with the knowledge and skills to be able to contribute to the hedgerow knowledge base in a standardised fashion, potentially through a workshop delivered at Barnes Common.	2019 (Q3-Q4)	TCV	Friends of Barnes Common		
HR10 – Establish the 'Hedgerow Safari', training workshop to be held at Barnes Common with a downloadable informational instruction pack to be found on the SWLEN website.	annual	SWLEN	TCV Green Gym, Environment Trust		
HR11 – Have the reporting mapping system launch on the SWLEN website, all members of the Richmond Biodiversity Partnership to disseminate this information through respective communication outlets.	annual	SWLEN	RBP		
Objective 4: To secure appropriate management for hedgerows ensuring their protection and enhancement.					
HR12 – Utilising the TCV online handbook, compile a resource pack that informs land managers and project managers of appropriate methods of managing hedgerow. Integrate this into their training workshop.	2019	TCV			
HR13 – Work with LBRuT to ensure that permission to remove ancient or species rich hedgerows is only granted in exceptional circumstances.	2019	LA	SWLEN		
HR14 – Work with LBRuT to ensure that the use of non-native species is disallowed in the planting of new hedges throughout the borough.	2019	LA	SWLEN		
HR15 – Utilising existing legal frameworks to encourage any breach of the law is pursued and prosecuted where possible.	2019	SWLEN			
Objective 5: To enhance and increase both where possible across LBRuT.	h the abun	dance and	quality of hedgerows		
HR16 – Utilising data available, identify areas where new hedgerow can be planted. Ensure that native species-rich hedges are planted and sourced from recommended suppliers.	2019	SWLEN	LA, RBP		



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HR17 – Plant and lay an additional 500m of hedgerow annually.	2019 annual	TCV	FORCE/ Friends of Barnes Common/ Local Land Owners			
HR18 – Encourage land managers to establish hedgerow as an alternative/complementary feature to fencing and/or walling.	2019	LA	SWLEN			
HR19 – Identify grant providers who could be potential sources of funds to procure hedging plants.	2019	TCV	RBP			
HR20 – Identify existing hedgerows which could be potentially enhanced through additional planting schemes.	2019	SWLEN				
Objective 6: Raise the profile of the ecological value of hedgerows to the general public increasing their awareness and appreciation.						
HR21 – Produce a factsheet of information on the importance of hedgerows.	2019	SWLEN				
HR22 – Develop a web site link that has information on hedgerows within LBRuT.	2019	SWLEN	Mapping for Change			
HR23 – Involve communities in management projects.	ongoing		TCV			

8. Relevant Action Plans

Local Plans

Ancient parkland & veteran trees, Lowland acid grassland, Broadleaved Woodland, Private Gardens, Stag Beetle, Bats, Song Thrush.

London Plans

Grasslands, Churchyards & cemeteries, Heathland, Parks & Urban Green Spaces, Private Gardens, Wasteland, Woodland, House Sparrow.

National Plans

Grasslands, Heathland, Woodland, Parkland, Built up Areas and Gardens, Urban, Stag Beetle, Song Thrush.

9. Key References and Sources of Further Information

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Abhijith, K. V., Kumar, P., Gallagher, J., McNabola, A., Baldauf, R., Pilla, F., Broderick, B., Di Sabatino, S., Pulvirenti, B. (2017) *Air Pollution Abatement Performances of Green Infrastructure in Open Road and Built-up Street Canyon Environments – A Review.* Atmospheric Environment, Online link: <u>https://doi.org/10.1016/j.atmosenv.2017.05.014</u>



10. Abbreviations

BAP – Biodiversity Action Plan NE – Natural England BCT – Bat Conservation Trust **RBP** – Richmond Biodiversity Partnership DEFRA – Department for Environment, Food SAC – Special Area of Conservation SBI – Site of Borough Importance and Rural Affairs FC – Forestry Commission SLI - Site of Local Importance SMI – Site of Metropolitan Importance GiGL – Green Space Information for Greater SSSI – Special Site of Scientific Interest London GLA – Greater London Authority SWLEN - South West London Environment HAP – Habitat Action Plan Network LBRuT – London Borough of Richmond upon TCV – The Conservation Volunteers TLS – Thames Landscape Strategy Thames LA – Local Authority (LBRuT) TRP – The Royal Parks LNHS – London Natural History Society WLO - Wildlife Liaison Officer (Metropolitan LTWGS – London Tree and Woodlands Grant Police) Scheme WWT – Wildfowl and Wetlands Trust

11. Contact

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Richmond upon Thames

Habitat Action Plan

Lowland Acid Grassland



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"By the middle of spring there may be on the ... Common little heaps of sandy material surrounding a miniature crater which leads to a deep hole, like the pipe of a toy volcano... shortly a red-tailed bee approaches, goes down the shaft, performs its business, and departs."

Walter Johnson, Animal Life in London, 1930

1. Aims

- To ensure the protection and optimal management of lowland acid grassland (LAG) and associated wildlife within the London Borough of Richmond upon Thames (LBRuT).
- To improve awareness of the ecological value of LAG in the local, regional and national context.
- To develop appreciation of the habitat and its associated flora and fauna across the broadest spectrum of the local public and within higher education, that may afford research opportunities. To secure the involvement of local residents in its conservation.
- To ensure all significant sites of LAG found within LBRuT have an appropriate management system, primarily aimed at pragmatic but effective conservation and enhancement of the habitat.

2. Introduction

Lowland Acid Grassland refers to the type of sward that develops over acidic soils. This type of soil is usually derived from underlying sands and gravels, is free-draining and low in nutrients. The finer qualities of this habitat are indeed worthy of wider awareness and appreciation.

Typical fine grass species associated with this habitat i.e. *Agrostis capillaris* (common bent), *Festuca spp* (red and sheep's fescues) and *Deschampsia flexuosa* (wavy hairgrass), are attractive in themselves and do not require regular mowing. Unlike chalk grassland, acid swards are not generally celebrated for their wealth of colourful wildflowers, although they can present a colourful



mosaic containing low-growing species that are highly attractive, including *Rumex acetosella* (sheep's sorrel), *Campanula rotundifolia* (harebell), *Erodium cicutarium* (common stork's-bill), *Plantago coronopus* (buck's-horn plantain), *Polygala serpyllifolia* (heath milkwort), *Spergularia rubra* (sand spurrey) and *Ornithopus perpusillus* (birds-foot). Other associated wildflowers include *Potentilla erecta* (tormentil), *Hypochaeris radicata* (cat's-ear) and *Galium saxatile* (heath bedstraw).

A less widespread sward, often found in areas where drainage is more impeded, and present in parts of Richmond Park, consists mainly of *Molinia caerula* (purple moor-grass). Nationally scarce plants found in Richmond's acid grassland include *Trifolium glomeratum* (clustered clover), *Moenchia erecta* (upright chickweed), *Medicago minima* (bur medock), and *Scilla autumnalis* (autumn squill).

It is important to note that acid grassland has always had an important place in the habitat mosaic on heathland, and that the current lack of heather should be viewed as symptomatic of an imbalance brought on by particular circumstances, rather than the undesirable replacement of one habitat by another. LBRuT contains vastly more LAG habitat than heathland. Therefore, although this HAP in principle seeks enhancement and restoration of both, its focus is on the maintenance and improvement of LAG.

The largest areas of LAG occur in and around Richmond and Bushy Parks, with other areas in Hampton Court Palace/Home Park, the Royal Botanic Gardens (RBG) Kew, and the Commons of Barnes, East Sheen and Ham. There is also acid grassland on the Royal Mid-Surrey and Richmond Golf Courses, and at the former St Michael's Convent on Ham Common. There also will be unidentified patches within private gardens surrounding these areas. Most of these sites lie on the gravels of the River Thames terraces and thus have free-draining, light soils.

The acid grasslands and heaths of Greater London, including LBRuT, south Essex and north-west Kent, are all host to a distinctive community of spiders, bees and wasps, ants, beetles, bugs and flies known collectively as the Thames Terrace Invertebrates. This is one of the most important and threatened invertebrate assemblages in Britain (London Biodiversity Action Plan 2005) and includes many hole-nesting bees, ants and wasps, such as the rare mining bee (*Andrena florea*). Features believed responsible include the loose and often denuded substrate, the region's geographic situation in the driest corner of the British Isles, whilst still in proximity to the sea, and an availability of nectar-rich wildflowers. The distribution of species within this community is apparently restricted and under pressure from continuing development, coupled with a lack of appreciation/awareness for the acid grassland habitat on which they depend.

More familiar insects frequenting acid swards are the small heath (*Coenonymphia pamphilus*) and small copper (*Lycaena phlaeas*) butterflies. Associated bird life, attracted by rich insect pickings, includes the meadow pipit (*Anthus pratensis*), skylark (*Alauda arvensis*) and green woodpecker (*Picus viridis*).

Increasingly, researchers are recognizing the importance of yellow meadow ants (*Lasius flavus*), with their characteristic ant-hills, as ecological engineers affecting the patterns and survival of many other species. For example, in 2018, there were areas of Richmond Park where harebell, sheep's sorrel and heath bedstraw only occurred on ant-hills, while a topsoil of sand above gravel is most likely due to erosion of old ant-hills. The size and distribution of ant-hills are strong indicators of undisturbed open LAG habitat, with some ant hills in the borough estimated at 150-200 years old (Dr Tim King, 2018).

Acid grassland sites in London are arguably some of the richest in the UK in Hymenoptera, affording opportunity for continuing and robust research. For example, recently a new cynioid (gall wasp) species, *Alloxysta pseudoconsobrina* was described based on a specimen collected from Barnes Common, and is currently housed at the British Museum of Natural History (Ferrer-Suay et al. 2017).



3. Current Status and Progress made under previous Action Plans

Lowland dry acid grassland is listed as a priority habitat for conservation in the UK Biodiversity Action Plan. London's estimated 1300 hectares contribute about 4% to the national resource. Because of the widespread distribution of acidic soils, most London boroughs have some acid grassland. Although there are several extensive areas - including Richmond Park, Wimbledon Common and Putney Heath in Merton and Wandsworth, and at Wanstead Flats in Redbridge - a significant proportion occurs as widely scattered, overlooked fragments on the margins of more ubiquitous habitats, such as amenity grassland, scrub, road and rail verges and on some longer-established wasteland sites.

Much of London's remaining acid grassland has suffered in quality through a variety of factors. Ideally, it would be maintained by grazing animals and occur alongside stands of heather and gorse, small areas of bare ground and lichen cover, patches of scrub and peat-filled bogs. There would also be variation in structure within the grassland community reflecting its stage of succession. However, invasion by coarse grasses, bracken and developing woodland, are all too commonly associated with the habitat London-wide, particularly where soil depth and nutrients have increased or the soil acidity decreased for whatever reason.

LBRuT has the largest total area of LAG in Greater London with 620 hectares. This accounts for almost half of the recognised LAG habitat in Greater London (46%). Therefore, any significant changes to area within LBRuT are also significant within London. In view of its scarcity within London, it is not surprising that many of its characteristic species are also rare. Most of the acid grassland specialist species can be found within LBRuT.

<u>Status on surveys and indicators of site conditions</u>: So far as we are aware, there has been no full ecological survey of vegetation within LBRuT since 1984 or 1985, carried out at that time by the now-defunct London Ecology Unit. More recently, detailed National Vegetation Classification (NVC) surveys have been conducted at some sites (e.g. Richmond Park in 2004, 2011, and most recently 2016). However, these surveys do not of themselves provide a satisfactory basis for accurate measurement of the loss or gain in total acid grassland coverage within LBRuT over the years, as they are site specific.

Less formal surveying systems have been adopted at some sites (e.g. Barnes Common) which allow coverage and quality to be assessed based on the frequency of key species present.

Anecdotal and photographic evidence (including some wartime aerial photography) has also been used to suggest that there might have been a significant increase in the acid grassland at Kew Gardens due to a more relaxed management system, whilst at other sites, such as on the Commons at Barnes and Ham, there may have been significant losses in the previous decades, since grazing ceased well before that.

<u>Progress under previous HAP</u>: The previous local HAP for LAG set targets for identifying all significant sites and encouraging improved management, identifying walk leaders and speakers, campaigning to get good news out, and identifying suitable sites for restoration and enhancement. Progress has been and continues to be made on these targets, as well as earlier targets on grazing and improved mowing regimes.

In addition to the specific targets set in previous plans, managers of several key sites have continued to enhance and restore LAG habitat, with further experimental grazing and/or mowing regimes, scrub and bracken control (including use of working horses), and scrapes. Research has been commissioned on yellow meadow ants, and relevant surveying and monitoring for relevant species encouraged.



LAG remains a little understood habitat among the general public, although its importance is recognised within LBRuT, with good support not only from the biodiversity group but also among the Council's officers and policy makers.

4. Specific Factors Affecting the Habitat

4.1 Lack of a clear identity

The historic and somewhat lowly image of LAG, coupled with its confusing identity as a habitat type, have at times led to it being undervalued. This makes it particularly vulnerable to mismanagement, and also viewed as expendable by developers and their advisers. Indeed, a good substrate of gravels is almost ideal for low-rise building, and some fail to recognise that this is a natural feature with its own specific ecology. A further consequence can be reduced interest from third party funding sources in supporting LAG, in comparison with other habitats – such as woodland tree planting.

4.2 Management constraints

4.2.1. Losses to acid grassland areas such as at the Commons at Barnes and Ham, seen in the latter half of the twentieth century, were a result of a lack of management plans to maintain or enhance the habitat. This has been largely rectified for significant sites, although further work is needed to ensure plans can be implemented effectively.

4.2.2. The optimal management of acid grassland is generally considered to be through low intensity natural grazing by a variety of animals including sheep, cattle, ponies (as in Hampshire's New Forest), deer and rabbits, as evidenced by the successful management in the Royal Parks and the London Wetland Centre in Barnes. As important as the grazing, is the impact of hooves, which is hard to replicate. However, the small size, fragmented nature and concern about fencing of common lands (incorrectly assumed by the public to constitute enclosure) make this impractical for open areas such as the Commons at Barnes, East Sheen and Ham. Even where grazing is possible, there is concern about the disturbance to wildlife and grazing animals from uncontrolled dogs as well as the increased footfall which interest in the animals would bring, thus requiring constant supervision.

4.2.3. Mowing is the most suitable alternative to grazing for larger 'un-grazeable' open spaces. In addition, minor, controlled fires have also been effective in halting succession on many sites, but this is unlikely to be practical within the borough. For areas where mechanical mowing is the next best alternative to grazing, it is crucial for cutting regimes to be carefully worked out, otherwise much damage can be done, especially to a site's invertebrate interest. Ideally cutting should be phased in a checker board pattern, maintaining different heights of sward – and allowing small mammals to escape. However, many areas are inaccessible or unsuitable for tractor mowing, due to obstacles such as uneven ground, ant-hills or tree stumps. In these situations, cutting should be by hand or reciprocating scythe or strimmer, or by topping hay cut on larger meadows, which should reduce damage to invertebrates. Necessary removal of the cuttings, to help reduce nutrients in the soil, should be delayed briefly to allow insects time to safely evacuate the area after cutting, and before baling or other removal. Few mowing contractors are able to offer such a service and many managers do not have access to appropriate machinery. Barnes Common has demonstrated how the use of two-wheel tractors with reciprocating blade scythes, augmented by a compact tractor with topper, hay bob and small baler can allow an effective mowing regime for smaller sites.

However, recent research on ant-hills suggests that areas with undisturbed ant-hills benefit from minimal intervention, limiting work as far as possible to manual scything, raking and sapling removal, and only when necessary.



4.2.4 Timing is a further issue: the window between when the grassland is needed to support invertebrate populations (and higher order species), and when it is too late to mow and remove is tight – typically within September.

4.2.5. A lack of resources can lead directly to passive neglect, allowing bracken to dominate, scrub and woodland to develop and invasive plants to establish themselves. Programmes in the last decade at some of the key sites, such as Barnes Common, have shown how this can be reversed, with bracken and scrub reduced, woodland borders pushed back and invasive plants brought under control. Bracken and scrub control have been shown to be effective at several sites: costs need not be prohibitive and funding can be identified to support LAG habitat improvement such as this.

4.2.6 The lack of records and evidence supporting best practice for management of LAG reduces the case for priority in budget allocations and third-party funding applications.

4.3 Amenity and Sports Use

As stated in Section 3, the majority of the acid grassland within LBRuT is found either in public open spaces or within golf courses, where there are often heavy pressures on site managers to accommodate conflicting recreational demands. Acid grassland therefore continues to be lost through unsustainable management, such as irrigation, fertilisation, reseeding and even tree planting.

Recent years have seen a welcome upsurge in the number of visits to local open spaces and in recognition of their contribution to health and wellbeing. However, this also results in heavy pressure on these areas for popular leisure and recreational uses such as dog-walking, horse-riding, cycling and walking, all adding to wear and tear, as well as increased amounts of litter and dog excreta. There is also increased pressure to use open sites for commercial enterprises such as professional dog walking, forest schooling, organised games (survival games, parties etc), often on the grounds of employment creation or education, but without regard to the impact such activities can have on sensitive habitats such as LAG and the capacity of the site to absorb higher footfall. The thoughtless fly-tipping of green garden waste adds further to increased nutrient levels and the introduction of non-native species that can threaten LAG habitat.

The risk of fires, whether started by accident or deliberately, is another hazard within public sites. This can result in direct damage to habitat, or to managers keeping their grasslands mown too short and regularly to benefit wildlife. Against this there is increasing public recognition that there are benefits to wildlife in leaving areas unmown – such as in cemeteries where cutting may be delayed to a single cut late summer/early autumn or in border strips around amenity areas.

4.4 Other Concerns

4.4.1. Often, the roads, cycle tracks and footpaths that run through the open spaces on which most of LBRuT acid grasslands are found are also considered vital routes for through traffic. Therefore, 'best practice' management plans to address that the consequent degradation must be tempered to accommodate the wider regional transportation and local amenity concerns.

Where roads or paths are resurfaced, particular attention needs to be paid to the materials imported. There have been instances of calcareous path materials having a measurable impact on the soil composition as much as ten metres from the pathway, due to water run-off and dust particles. The latest Public Spaces Protection Orders (PSPO's) for LBRuT have removed restrictions on bicycles. Special measures may be needed if this results in undue wear and tear on sensitive nature conservation sites, which would include all LAG sites.

4.4.2. Nutrient enrichment by atmospheric pollution is causing increasing concern, but beyond the control of most site managers. Vehicle emissions are an insidious agent of change within plant communities. This may be partially addressed in areas such as Richmond Park, but are beyond



control in most other areas of Richmond. Salt applied to roads in winter can be damaging to vegetation on verges, while all the LBRuT sites are below the Heathrow flight path and thus exposed to enhanced pollution levels from air traffic. It may seem logical that decades of smoke-free environment and the resulting reduction in acid rain may have actually reduced the acidity balance of the soil. However, at the time of writing, there appears to be very few long-term UK monitoring studies of soil acidification and none of soil biota (<u>http://www.air-quality.org.uk/16.php</u>). The effect of recent measures to control vehicle emissions will be of considerable interest to several key LAG sites in Richmond.

4.4.3. Nutrient enrichment by dogs remains a significant concern, with increasing numbers of people owning dogs, which need to be exercised. A further concern is the veterinary chemicals and pharmaceuticals introduced by dogs and through animal husbandry. Introduction of walks which help keep animals away from the more sensitive areas can help – ideally with 'sacrificial' areas where dogs are initially let off leads and most likely to urinate (now a bigger problem than dog mess, which is increasingly bagged and removed by responsible dog owners).

4.4.4. There is constant pressure on open unprotected sites for development purposes, and even protected sites are impacted through increasingly dense development at their fringes. This can lead to increased fragmentation, habitat degradation and lack of 'corridors' for wildlife. Further concerns at present include the possibility of golf courses or properties with large lawns ceasing to be viable and/or becoming available for sale or development, more intensive development adjacent to ecologically sensitive sites, the associated impacts on connectivity corridors, and the impact of inconsiderate lighting on nocturnal species. This includes, but is not limited to, bats.

Of particular concern is the connectivity of the 'Ham Circle' of sites with LAG (including Ham Lands, Ham Common Woods and Petersham Lodge Woods) with records of similar invertebrate populations, which in turn support higher life forms. These populations far exceed the levels which would be expected of such sites if they stand alone. Consequently, these are considered to be relic populations from when the whole area was less built up, and probably only survive by virtue of the connectivity between sites as at 2018.

5.Current Status and Action

5.1 Legal status

5.1.1. Protected sites: Many of the areas of acid grassland within LBRuT enjoy some level of recognition and protection. Richmond Park is a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR). It is a Grade 1 Heritage Landscape and Special Area of Conservation (SAC). Bushy Park was granted SSSI status in 2014. Within Hampton Court Palace, Home Park is an SSSI, a Metropolitan Site of Importance for Nature Conservation (SINC) and a Grade 1 Listed Park. The Royal Botanic Gardens at Kew is a UNESCO World Heritage Site. Barnes Common is Metropolitan Open Land (MOL) and a Local Nature Reserve (LNR). Many of the other areas in which significant acid grasslands are to be found within the borough have Metropolitan SINC status.

5.1.2. Protected species: Identified protected species associated with the habitat in LBRuT are primarily the rare invertebrates, several of which are listed in the British Red Data Book (RDB). Examples include *Andrena florea*, the bryony mining bee; *Philanthus triangulum*, the bee wolf wasp; and the digger wasps *Diodontus insidiosus* and *Cerceris quinquefasciata*.

5.2 Mechanisms targeting the habitat

Note: The following management and restoration actions are ongoing. They need to be supported and continued, in addition to the actions listed under Section 7.



5.2.1. Scrub management: Arguably the single most effective action that can be taken for LAG is the management of scrub and bracken, either within or adjacent to the LAG area. This allows the quality of the sward to increase, and in most cases will extend coverage as well as quality. The methods used for scrub and bracken control will inevitably vary by site, depending on equipment, manpower and funding available, but may include regular and repeated cutting, mattocking or scraping out root (bramble in smaller areas), spraying (by licensed operators), rolling (bracken) or even the temporary permitting of regular outdoor learning groups (positive wear and tear). The effectiveness of any programme is also highly dependent on the timing of its implementation and the understanding of requirements/skills of those implementing the programme.

5.2.2. Advice and Guidance: it would be of great benefit to all sites if those able to graze or achieve high standards of mowing might share best practice and also offer assistance to other managers, with possible scope for identifying contractors able to offer the specialised services required.

5.2.3. Enhancement: the best natural enhancement will come from the spread of ant colonies within the site, as they are the natural architects of LAG. Where soil has clearly become over-enriched and typically is deeper than 10cm, it may be beneficial to scrape to release the seedbank in the lower layers of soil. Natural regeneration should be supported wherever possible, but restoration of some sites may require judicious seeding with appropriate species and from known UK sources, as far as possible from local sites.

It should be recognised that many of the actions taken to control scrub and bracken may not eliminate these, but will result in enhancement, as the thinning or less vigorous growth of the scrub or bracken may allow better growth by grasses and other species. Control programmes must allow for repeat or additional actions in at least two subsequent years, and from time to time thereafter.

Care should also be taken to ensure that any materials brought on site, such as for path making, will not cause damage to the balance of the soil or risk introducing alien species.

5.2.4 Education and Understanding: alongside the practical steps outlined above, raising awareness and improving knowledge and understanding of LAG within the wider community is vital. To this end, the actions are suggested with regard to both physical conservation and engagement across as wide a cross-section of the public as possible.

In this way, it is hoped that everyone using LAG habitats, including dog walkers, will have greater understanding and respect with regard to the impact of our actions, including addressing all forms of eutrophication and supporting moves to reduce vehicle emissions. It is also hoped that there will be more opportunities to share best practices across different sites locally and regionally by providing occasions for sharing knowledge and networking among managers.

6. Flagship Species

Some characteristic flora and fauna of acid grassland in LBRuT:

Harebell	Campanula rotundifolia	This 'bluebell of Scotland' is a welcome addition to dry grassland swards late into the summer. It is present in small numbers in Richmond Park, but has not been observed on Barnes Common for over two decades
Sheep's sorrel	Rumex acetosella	A member of the dock family, its blood-red leaves characterise acid grassland and have been eaten as a wild salad plant in the past. This is a common first-generation species in lowland scrapes before grasses establish.
Heath bedstraw	Galium saxatile	A sprawling plant, often found on the tops of anthills. In flower it has a foam-like appearance, and was traditionally used to stuff



		pillows and mattresses. A chemical property may have repelled bed bugs and other parasites.		
Wavy hair- grass	Deschampsia flexuosa	An attractive grass with a silvery-red inflorescence, it is typical of several fine grasses found in this habitat.		
Small copper butterfly	Lycaena phleas	The metallic orange of this tiny butterfly's forewing provides its common name. A common larval foodplant is sheep's sorrel.		
Green woodpecker	Picus viridis	Frequently seen on the ground in acid grassland. Ants are a favoured food, enticing the bird from its more usual haunts amongst parkland trees and woodland. Local Name: yaffle.		
Yellow	Lacius flavus	An ecological engineer, affecting the patterns and survival of many other species. E.g. areas of Richmond Park where harebell, sheep's sorrel and heath bedstraw occur only on ant-hills. A paper in Bird Study (Alder & Marsden, 2010) suggests patterns of green woodpeckers in the countryside are correlated with the presence of ant-hills.		
meadow ant	Lasius liavus	A further two recent papers from Germany (Streitberger & Fartmann 2015, Streitberger & Fartmann 2016) names two species that, whilst not likely to be found in the Richmond area, do offer further insight into ant-hill ecology, highlighting that ant-hills are at the basis of the ecology of many other species, although this has only recently been realised.		

7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic Actions (across all SAPs and HAPs)					
Action	Target Date	Lead	Other Partners		
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS		
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA		
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO		
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS		
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of	Ongoing	LA	Working groups		



species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.			
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups

Specific actions for lowland acid grassland

The targets broadly fall within three categories: extend coverage, improve quality and improve knowledge and understanding.

Target	Target Date	Lead	Other Partners
AGH01 – Maintain a list of all significant sites with acid grassland. Identify those at risk in any respect. Each site to provide information re organisation; named contact details for LAG HAP liaison; reference or link to their management plan (please see Appendix).	Ongoing	Working group	Identifed significant sites
AGH02 – Extending coverage: Encourage site managers to set targets relevant to their own site; undertake a consistent borough-wide survey, subject to funding.	2019 - 2020	Working Group	Identified significant sites
AGH03 – Improving quality: Encourage site managers to improve quality. Working group to collate information and encourage most effective practices to be adopted for each site.	2019 - 2020	Working Group	Identified significant sites
AGH04 – Resist loss to hard surfacing or development. Encourage measures to improve	ongoing	Working Group	LBRuT Planning



connectivity. If loss is unavoidable, ensure appropriate compensation deployed on LAG.			
Recommend appropriate materials for paths or other 'surfaces' laid within LAG areas.			
AGH05 – Encourage improved record-keeping with regard to any actions taken to extend or improve LAG habitat. Share best practice on providing clear contractor specifications and improving performance against specifications.	Ongoing	Working Group	Identified significant sites
AGH06 – Standardise measurement of progress. Set standards for measurement of extent and quality of LAG, reconciled across varying survey methodologies.	2019	Working group	
AGH07 – Collate existing resources.			
Establish central library/archive on LAG.	2020	FoBC	All
Cite sources to facilitate further research and to avoid duplication.			
AGH08 – Encourage research project(s) to help define importance of habitat within academia.	2020	Royal Parks	FoBC
AGH09 – Investigate and inform group with regard to funding opportunities for LAG (e.g. improvement projects, condition surveys, research).	Ongoing	FoBC	Working Group
AGH10 – Develop annual event for managers and volunteers with interests in LAG.	2019 - 2022	Working Group	
AGH11 – Research potential of LAG for green roof developments. Provide literature review and experimental example.	2019 - 2022	FoBC	
AGH12 – Investigate possibilities of translocating <i>L flavius</i> hills to appropriate sites to protect species and/or enhance habitat and opportunities for LAG flora and fauna.	2022	Working Group	
AGH13 – Continue to promote links with local universities and undergraduate or graduate students who may be interested in using sites for ecological projects	On- going	FoBC	
AGH14 – Promote links with local schools and community groups to make community aware of value of these local sites.	On- going	FoBC	Working Group
AGH15 – Investigate support and funding to create 'centre for LAG' with research, educational and community engagement potential.	2020 - 2022	FoBC	



8. Relevant Action Plans

8.1 Local Species Action Plans

Bats, Song Thrush.

8.2 London Habitat Action Plans

Acid Grassland, Woodland, Heathland. Other plans that may make reference to LAG: Wasteland; Churchyard and Cemeteries; Parks, Amenity Grasslands & City Squares; Open Landscapes with Ancient/Old Trees; Rail Line-sides, Reptiles; Humble Bumble.

8.3 National Species and Habitat Plans

Lowland Heathland, Lowland Dry Acid Grassland, Purple moor-grass and rush pasture, Skylark, Hornet robber-fly (*Asilus crabroniformis*), Long-tongued bumble-bee (*Bombus humilis*).

9. Abbreviations

BCT: Bat Conservation Trust	MOL: Metropolitan Open Land
DEFRA: Department for Environment, Food and	NE: Natural England
Rural Affairs	NNR: National Nature Reserve
FC: Forestry Commission	PSPO: Public Spaces Protection Order
FoBC: Friends of Barnes Common	RBP: Richmond Biodiversity Partnership
GA: Generic actions	RDB: British Red data book
GIGL: Greenspace Information for Greater London	SAC: Special Area of Conservation
GLA: Greater London Authority	SINC: Site of Importance for Nature
HAP: Habitat Action Plan	Conservation
LA: Local Authority (LBRuT)	SSSI: Site of Special Scientific Interest
LAG: Lowland Acid Grassland	SWLEN: South West London
LBG: London Bat Group	Environment Network
LBRuT: London Borough of Richmond upon Thames	TLS: Thames Landscape Strategy
LNHS: London Natural History Society	TRP: The Royal Parks
LNR: Local Nature Reserve	WLO: Wildlife Liaison Officer
LTWGS: London Tree and Woodland Grant Scheme	(Metropolitan Police)
LWT: London Wildlife Trust	WWT: Wildfowl and Wetlands Trust

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11. Acknowledgements

This Habitat Action Plan was updated in 2019 by the Friends of Barnes Common, working in collaboration with members of the Richmond Biodiversity Partnership and South West London Environment Network. Further contributions were gratefully received from Dr Nigel Reeve, Dr Tim King, Charlotte Williams and Julia Balfour from the Royal Parks, and Natalie Dale-Skey at the Natural History Museum. Further comment and feedback is very welcome.

12. Contact

The Leads for this Habitat Action Plan are Mike Hildesley and Sharon Morgan from the Friends of Barnes Common.

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Sharon Morgan: education@barnescommon.org.uk



Appendix – Significant LAG sites and contacts

- Richmond Park Julia Balfour
- Bushy Park Julia Balfour
- Home Park Nicholas Garbutt
- Barnes Common Mike Hildesley / Sharon Morgan
- Ham Common Tasha Hunter
- Royal Mid-Surrey Golf Course none at present
- Richmond Golf Course Roehampton (RP liaison: Joe Scrivener)
- East Sheen Common Tasha Hunter



Richmond upon Thames

Habitat Action Plan

Neutral Grassland



© Paul Losse

1. Aims

- To establish and map the full extent of neutral grasslands, including lowland meadow habitat, within the London Borough of Richmond upon Thames (LBRuT).
- To ensure the protection and optimal management of neutral grasslands within LBRuT.
- To identify and prioritise semi-improved neutral grasslands within LBRuT with the potential for restoration to species-rich grassland.
- To restore a proportion of LBRuT's neutral grassland sites to lowland meadow habitat
- To establish and implement an appropriate management system for all significant sites of neutral grasslands found within LBRuT.
- To develop local appreciation of the habitat and its wildlife, and secure the involvement of local residents in its conservation.

2. Introduction

Found on neutral, mainly clay or loam soils, neutral grasslands and lowland meadows can be rich wildlife habitat and are treasured components of our pastoral and historical landscapes. A wideranging approach is adopted in this plan to grasslands treated as neutral grasslands. The designation of "neutral grassland" in this HAP includes most forms of semi-improved and unimproved neutral grassland but excludes very species-poor improved and amenity grasslands. In



LBRuT this grassland is cut rather than grazed (except for deer grazing within The Royal Parks and Home Park). With little or no improvement by fertilisers, neutral grasslands may be cut for hay in late June to early July after the summer profusion of colourful flowers. The flowering plants set seed before the hay is cut and, traditionally, the meadow is grazed in autumn.

Semi-improved grasslands are moderately species-rich with typically 8-15 species per metre squared. Typical species include autumn hawkbit, black medick, cuckoo flower, bulbous buttercup, common cat's-ear, common sorrel, germander speedwell, lesser trefoil, ribwort plantain, meadow buttercup, red clover, selfheal and yarrow.

Lowland meadows are characterised by a higher number of herbs and grasses – they can frequently boast up to 30 grasses and 100 or more wildflower species. Grasses include sweet vernal-grass, crested dog's-tail and red fescue, while flowers include common knapweed, bird's-foot trefoil, lady's bedstraw, meadow vetchling, ox-eye daisy, rough hawkbit and yellow rattle.

Bees and butterflies, such as meadow brown and common blue are among the hundreds of insects which probe the grassland flowers for nectar. In turn, these attract bats and many declining farmland birds, including skylark, whose numbers have more than halved over the last 25 years.

3. Current Status

Semi-improved neutral grasslands are found on a wide range of soil types and conditions, often derived from more species-rich grassland following agricultural improvement. They are fairly ubiquitous across the UK.

Lowland meadow, however, is a "habitat of principal importance" in England. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. The habitat is listed in section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. The purpose of the section 41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions

Unimproved neutral grassland habitat has undergone a remarkable decline in the 20th century, almost entirely due to changing agricultural practice. It is estimated that by 1984 in lowland England and Wales, semi-natural grassland had declined by 97% over the previous 50 years to approximately 0.2 million hectares.

Lowland meadow habitat is very rare within LBRuT and is currently only known to exist at two sites: Brewhouse Meadows in Bushy Park and an area of the London Wetland Centre. However there are a large number of semi-improved grassland sites that, with some restoration and appropriate management, have the potential to be restored to more species rich grassland.

4. Specific Factors Affecting the Habitat

A key feature of lowland meadows and the more species-rich semi-improved grasslands is that they are found on neutral soils with low nutrient inputs. Any nutrient enrichment such as historic addition of fertilizer, dog fouling or atmospheric nitrogen deposition will affect species richness and the grassland is more likely to be dominated by a few competitive species. Any previous ploughing, reseeding or application of herbicides will also have an impact on grassland condition.

To ensure long-term value, neutral grasslands must be maintained, as, without maintenance, natural succession results in a shift towards scrub and woodland. Management prevents change to a species-poor sward dominated by coarse grasses and succession to woodland. Without regular management, studies have shown that most grassland flowers disappear rapidly. Even if the grass is left uncut for a single year, coarser vegetation will start to become more dominant.



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Plants need to complete their full life cycle each year – i.e. allowed to grow, flower and set seed – in order to thrive. Generally, most flowers take roughly six to eight weeks from flowering to successfully shedding viable seed. Cutting plants down in full flower deprives invertebrates of nectar and pollen and stops plants reproducing from seed. Regular and early cutting quickly eliminates some species, such as yellow rattle, which can even help keep grasses under control. Through its semi parasitic nature yellow rattle weaken course grasses creating space for other more delicate wildflowers.

Removal of grass clippings plays a major role in maintaining species-rich vegetation, curbing the growth of vigorous plants that smother their neighbours and helping to reduce soil nutrient levels. It also removes the 'thatch' of dead vegetation, exposing underlying soil and giving seeds room to germinate. However, overly intensive management can be damaging. All-year-round mowing or mowing too often can inhibit flowering, reducing the species richness of the sward.

Other Concerns

Roads, cycle tracks and footpaths through the open spaces on which most of LBRuT neutral grasslands are found are often regarded as vital routes for through traffic, and 'best practice' management plans to address the consequent degradation have to be tempered to accommodate the wider regional transportation and local amenity concerns.

There is constant pressure on open unprotected sites for development purposes, and even protected sites may suffer from increasingly dense development at their fringes, leading to increased fragmentation and habitat degradation.

5. Current Status

5.1 Legal status

Existing areas of lowland meadow as well as potential sites within LBRuT enjoy some level of recognition and protection: Bushy Park and The London Wetland Centre are both Sites of Special Scientific Interest (SSSI) and Sites of Metropolitan Importance for Nature Conservation. A number of the other sites supporting species-rich neutral grassland including Ham Lands, Oak Avenue Nature Reserve and Terrace Fields are also Sites of Importance for Nature Conservation and receive some protection through the Local Plan.

5.2 Neutral Grassland in LBRuT

Habitat audit

An initial audit will be required in order to

- a) Identify existing species-rich neutral grasslands within the borough.
- b) Assess the condition of these grasslands.
- c) Identify and map grasslands with restoration potential.

Habitat restoration

Options for habitat restoration include optimising management or full scale restoration involving soil preparation and re-seeding.



Characteristics of soil suitable for grassland restoration are shown below:

Parameter	Level
Topsoil depth	200–300 mm
Drainage	Slow
рН	Acid to slightly acid (pH 5.5–6.5)
Available phosphorus ^a	25 mg l ⁻¹
Organic matter ^b	4%
Total nitrogen ^b	0.2%

a Acceptable upper limit. A level of available phosphorus of less than 10 mg kg-1 is ideal to maximise floristic diversity within unimproved, semi-natural grassland communities (Marrs and Gough, 1989). While values of 11 to 25 mg kg-1 have potential, expect reduced floral diversity and increased risk of competition from rank and pioneer species.

b Acceptable lower limit.

Natural colonisation of bare substrates may be suitable where long establishment time frames are acceptable. While this option is preferable as plants establishing will be from local genetic stock adapted to soils and local conditions, it is only suitable if neutral grasslands are adjacent. Natural colonisation tends to be a very slow process as it requires the habitat to expand in from these local areas and bare ground will remain during this time that will be prone to colonisation by rank plant species. These will need to be controlled if they become dominant and limit the natural colonisation process. Natural colonisation can be accelerated through the selective introduction of grassland species via seeding or green-hay strewing.

Seeding can be undertaken using seed collected from a local donor site, subject to obtaining the permission of the landowner or tenant. Care must be taken not to deplete the donor site of seed by over-harvesting. When ripe, seeds should be collected and stored in airtight containers in a dark place at a temperature of between 2 and 5°C until required. Alternatively, a seed mix may be bought. A reputable seed house will be able to supply a mix suited to the climate and principal soil conditions of the site. Local provenance should be preferred, where available. Seed is normally sown in September or October, either by hand or using agricultural machinery such as slot seeders and seed drills, which maximise the area sown for the amount of seed used (Crofts and Jefferson, 1999). If sowing by hand, mix with damp sand to help ensure the seed is evenly distributed and lightly roll or tread the soil surface. Raking should be avoided as it can concentrate seed distribution or bury the seed too deep. If there is a prolonged dry period, the seeded area may be lightly watered. Birds and other seed predators should be kept off the land as much as possible.

Green-hay strewing can also be effective. This involves taking freshly cut hay from a local grassland which will contain seeds, and spreading this over the site to be colonised. Identify a suitable local donor site and ensure the hay is cut after flowering but while the seeds are still attached. At the donor site, keep hay turning to a minimum and collect and spread (strew) at the receptor site as soon as possible after cutting to minimise seed losses. The hay should be removed from the receptor site after a few weeks once the seed has dropped. Using a local source means that a closer match can be made between the new and existing grasslands.

Biosecurity (the objective of reducing the transmission of pests and diseases) is important and good working practice should be observed when using the green-hay strewing or seeding techniques to minimise the risk of transporting harmful organisms between sites. For example, clean and disinfect tools and boots before leaving donor and regeneration sites.


Habitat Management

If only one cut is possible, due to financial constraints the grassland should be cut once a year, between mid-July and the end of September. This allows plants to flower and, importantly, gives time for seed to be set.

Cutting the grassland in mid-July, at the end of September and once more before Christmas is the ideal option to conserve and enhance wild flowers, as it mimics the pattern of traditional meadow management.

Even where the creation works take place in a very suitable location, evaluation of the management practices is required to get the right mix for establishment and long-term success. A site-specific long-term management plan is required. This should include a monitoring and evaluation programme that will enable the management regime to be adapted as necessary. The JNCC (2004) reports that monitoring of lowland grassland habitats should include:

- Extent of the grassland establishment: % ground cover, bald patches and presence of leaf litter.
- Sward composition: grass to herb ratio, positive indicator species, negative indicator species, species with local distinctiveness.

6. Flagship Species

These special plants and animals are characteristic of neutral grasslands in LBRuT.

Flora	Fauna
Bugle	Meadow brown
Autumn hawkbit	Common blue butterfly
Birds-foot-trefoil	Green woodpecker
Common knapweed	Goldfinch
Goat's beard	Grass snake
Ox-eye daisy	Slow worm
Yellow rattle	
Lady's bedstraw	
Rough hawkbit	

7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

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GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions for neutral grassland			
Target	Target Date	Lead	Other Partners
NG 01 – Draw up a list of all significant sites supporting neutral grassland	End of 2019	working group	LA/HRP/TRP
NG 02 – Identify and map all neutral grassland sites within LBRuT	End of 2019	working group	SWLEN/ LA
NG 03 – Assess the condition of existing sites with a view to prioritise for enhancement/restoration	End of 2019	working group	SWLEN/ LA



NG 04 – Carry out soil sampling on selected sites to further establish suitability for restoration	End of 2020	working group	SWLEN/ LA
NG 05 – Trial restoration using a variety of techniques on one suitable site	End of 2021	Trained surveyors	NG working group LA, TRP HRP
NG 06 – Ensure optimum management of priority neutral grassland sites in LBRuT	End of 2020	LA, TRP HRP	SWLEN, LA
NG 07 – Identify possible surveyors/monitors and provide training as necessary	End of 2019	SWLEN / working group	SWLEN, LA
NG 08 – Monitor selected sites with trained surveyors	Annually from 2019	Surveyors/ working group	SWLEN, LA
NG 09 – produce report of all surveyed sites and disseminate to all interested parties	Annually	working group	SWLEN, LA
NG 10 – Develop lists of walk leaders and speakers & distribute to all site managers	End of 2019	working group	LA
NG 11 – Produce a web based educational leaflet on lowland meadow	2019	working group	SWLEN, LA

8. Relevant Action Plans

8.1 Local Plans

Lowland Acid Grassland

8.2 National Plans

Lowland Meadow

9. Key References and Sources of Further Information

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10. Abbreviations

BCT: Bat Conservation Trust DEFRA: Department for Environment. Food	LTWGS: London Tree and Woodland Grant Scheme
and Rural Affairs	LWT: London Wildlife Trust
FC: Forestry Commission	NE: Natural England
FoBC: Friends of Barnes Common	NERC: Natural Environment and Rural
GA: Generic actions	Communities Act
GIGL: Greenspace Information for Greater	RBP: Richmond Biodiversity Partnership
London	SSSI: Site of Special Scientific Interest
GLA: Greater London Authority	SWLEN: South West London Environment
JNCC: Joint Nature Conservation Committee	Network
LA: Local Authority (LBRuT)	TLS: Thames Landscape Strategy
LBG: London Bat Group	TRP: The Royal Parks
LBRuT: London Borough of Richmond upon	WLO: Wildlife Liaison Officer (Metropolitan
Thames	Police)
LNHS: London Natural History Society	WWT: Wildfowl and Wetlands Trust

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Richmond upon Thames

Habitat Action Plan

Private Gardens



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1. Aims

- To promote and celebrate gardening and landscaping methods that conserve and enhance wildlife habitats and biodiversity.
- To engage neighbours and communities in raising awareness and creating examples of best practice.
- To establish and promote public policy that aims to enhance biodiversity in private gardens and to prevent loss of green space.
- To foster partnership between private, public and voluntary sectors and engage influential organisations in education, health, horticulture and garden design.

2. Introduction

2.1 Scope of this plan

This Habitat Action Plan is relevant to gardens and other kinds of land or green space that are 'private' in the sense of 'not routinely accessible to the general public', including:

- Domestic gardens in owner-occupied or privately rented housing
- Domestic gardens in social housing
- Allotments
- Gardens, growing spaces and other green spaces in schools and colleges

The title 'private gardens' is used as shorthand to refer to all the above categories.



2.2. Why gardens are important

Gardens represent substantial land use in the London Borough of Richmond upon Thames (LBRuT) and are managed by a large number of people who can contribute to biodiversity by becoming involved in nature conservation in their everyday lives. Gardens include a range of habitats and are inter-connected green spaces for animals such as hedgehogs that need to roam over large areas. Typical garden habitats are woodland, grass areas, hedges, standing water, and walls. Some animal species, e.g. robins and foxes, are now more common in cities, and particularly domestic gardens, than in rural areas. This Habitat Action Plan (HAP) is relevant to Species Action Plans (SAPs) for hedgehogs, house sparrows, bats, song thrush, stag beetles and swifts. The local action plan for pollinators will also be relevant, as private gardens are important for a diversity of plants flowering throughout the whole year. As well as being wildlife habitats, gardens offer benefits in terms of drainage and water conservation, air cooling, air quality, and general health and well-being.

2.3. Public policy

Pressures from building development and the need for parking space can be a threat to biodiversity. Planning and transport policies at all levels, from local to national, have an impact on the biodiversity potential of gardens. The Mayor of London's aim to make London the world's first National Park City includes a commitment to regulation in new buildings for more green roofs, green walls, rain gardens (small green spaces which help prevent flooding), and habitats for wildlife. The Mayor's Environment Strategy and the GLA Greener City Fund represent opportunities to raise the profile of private gardens as important contributors to biodiversity.

"The importance of street trees, private gardens and the increasing number of green roofs and walls have not previously been fully appreciated in London. ... the Mayor will...provide advice to householders about how gardens contribute to improving green infrastructure at a local level. The Mayor's programme will [include] working with urban designers, developers and planners to promote and communicate the benefits of a greener built environment including gardens." (Draft London Environment Strategy August 2017).

2.4. Involving communities and organisations

There is widespread interest in wildlife gardening and scope for developing communication between people through the internet, e.g. social media, and in person. There are many good education and information resources about wildlife friendly gardening. However, information does not always reach the intended audience. It may reach people but not engage them actively and change behaviour. Organisations in all sectors can do more locally to disseminate and celebrate good practice and to involve a wide range of people and organisations in actively promoting biodiversity and helping to conserve nature.

3. Current status

Domestic gardens account for nearly one fifth of the land in LBRuT. Richmond is subject to the same pressures on green space as London and England as a whole. As the population grows, space is needed for housing, services and transport. Garden land is being lost and there is a need to slow the decline and also to mitigate the effects of garden loss on biodiversity.

3.1. Land use for domestic gardens

The most recent available data show that domestic gardens accounted for 19% of land use in Richmond and 24% in London as a whole. The lower figure for LBRuT is skewed by its large area of public green space. The area of public green space in Richmond is 51%, compared with 38% for London, and Richmond Park is a major contributor to this proportion.



	Total area (hectares)	Area of domestic buildings	Area of domestic gardens	Area of public green space
Richmond	58.5 thousand	7.0%	19.4%	50.8%
London	1.6 million	8.7%	23.8%	38.2%
England	132 million	1.1%	4.3%	87.5%

Table 1. Land Use Database 2005 (https://data.london.gov.uk/dataset/land-use-ward)

3.2. Loss of vegetated garden land

Across London, between 1998 and 2008 an area of vegetated garden land the size of 2.5 times Hyde Parks was lost on average each year. As a result of garden design and management, the area of vegetated land dropped 12%. The area of garden buildings increased by 55%. The amount of hard surfacing in London's gardens increased by 26%. These figures show how green space in private gardens is under threat. (London Garden City, LWT & GiGL, 2010).

3.3. Population growth

In 2011 there were 79,800 households in the London Borough of Richmond upon Thames. This represents an increase of 3,700 (4.9%) households in the period since the 2001 Census. The number of households in London has grown rapidly in the last three decades, from 2.5 million in 1981 to 3.3 million in 2011. (Richmond Census Borough Profile; Mayor of London).

4. Specific factors affecting private gardens

The following seem to be some of the main challenges to wildlife-friendly habitats within gardens:

- Desire for tightly mown lawns and tidy borders and a mistaken belief that wildlife gardens must be messy and unkempt.
- Removal of all dead wood, leaves and ivy, which if left provide good habitat for many fungi and invertebrates and hibernation sites for hedgehogs, other small mammals and amphibians.
- The use of garden chemicals and slug pellets.
- The replacement of boundary hedges with fences or walls without gaps, which affects species that need to roam for food, shelter and mating, e.g. hedgehogs.
- Fewer open compost heaps.
- Infilling of water features.
- Hard surfacing as a way of creating low-maintenance gardens or to provide parking or storage space.
- The decline in growing vegetable and fruit crops which provide wildlife with food, especially in the autumn and early winter.
- Predation of wildlife by domestic cats.
- Planting of alien or invasive species which generally support lower abundance and diversity of native wildlife.
- Use of more lighting in gardens than needed.



5. Current action

5.1. Legal status

Garden habitats have no specific legal protection, although trees are protected in Conservation Areas and through Tree Protection Orders. Individual species, including great crested newt, birds and bats are protected under European Protected Species regulation; the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000; and other similar legislation. Badgers are protected by the Badger Act 1992. Change of use of a garden is covered by the Town and Country Planning Act 1990. Allotments are regulated by the Allotments Act 1922, 1925 and 1950.

5.2. Mechanisms targeting private gardens

5.2.1. Public awareness

Raising public awareness is important so that people know how their own gardens may affect wildlife and why wildlife is important. Organisations in all sectors have a role to play in raising awareness. Examples include promoting wildlife surveys and encouraging best practice in gardening as well as compliance with legal responsibilities as householders, e.g. to avoid disturbing nesting sites. Increasing public concern for wildlife and biodiversity also encourages media interest, which can be harnessed to promote awareness.

5.2.2. Community engagement

There are good opportunities to work with groups of neighbours on common issues. Examples include local responses to the National Open Gardens Scheme and other open garden events, allotment associations, Richmond Borough in Bloom and individuals working on specific issues such as hedgehogs. There is scope for highlighting and disseminating good practice through a small local award scheme for wildlife-friendly gardening.

5.2.3. Education

Schools and colleges can enable children and young people to be future leaders in wildlife friendly gardening and nature conservation more generally. Voluntary and specialist organisations can support this through curriculum development and delivering educational sessions. Adult and community learning organisations can promote awareness for adults.

5.2.4. Local Authority planning and regulation

The local authority has a role in local policy, for example:

- Planning guidance on Sustainable Urban Drainage Systems
- Garden waste management
- Tree Protection Orders
- Tree Policy
- Ecology and Biodiversity Policy
- Limiting light pollution

6. Flagship Species

Private gardens considered as a whole represent a large and often interconnected area of green space. Several local action plans refer to species or habitats that are to be found in gardens. These are the Species Action Plans for hedgehogs, house sparrows, bats, song thrushes, stag beetles and swifts. A local strategy on pollinators is in development. Gardens have a great importance for bees



and butterflies as well as other insects. They are also important for amphibians and encouraging more mini-ponds would be a productive result of this Habitat Action Plan. Bats may also indicate the suitability of a garden as a foraging area, as well as indicating whether a building has suitable places to roost.

Certain species of conservation importance, characteristic of private gardens, have been selected as flagships for this Habitat Action Plan:

- Birds: Song thrush, house sparrow, swift
- Mammals: Hedgehogs, badgers, bats
- Plants: Native bluebell
- Invertebrates: Stag beetle, bees (all species), butterflies (all species)
- Amphibians: Common frog

7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP



GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions for private gardens			
Action	Target Date	Lead	Other partners
PG01 – Promote wildlife friendly gardening practices through web pages, social media, community and gardening and allotment association events, open garden events and printed information.	2019 and ongoing	ET	
PG02 – Develop local award scheme for wildlife friendly gardening.	End of 2019	ET, SWLEN	
PG03 – Promote wildlife surveys including butterfly count, garden bird watch	On-going	RBP	
PG04 – Develop interactive sightings map for flagship species and report sightings to GiGL in appropriate format.	End of 2019	ET, SWLEN	
PG05 – Promote awareness of legal obligations and best practice for biodiversity when commenting on planning applications.	Ongoing	LA	ET, others
PG06 – Work with planning officers, providing advice and making the case for wildlife friendly gardens.	Ongoing	SWLEN, ET	LA
PG07 – Develop and promote advice for householders and private landowners on conserving and enhancing biodiversity on private land.	2019	LA, SWLEN	
PG08 – Promote planning guidance and best practice on SuDS to householders and planning applicants.	2019	LA	SWLEN



Specific actions for private gardens			
Action	Target Date	Lead	Other partners
PG09 – Engage educational and private sector organisations in promoting wildlife friendly gardening, including garden centres, horticultural training institutions, private gardening and landscaping firms, etc.	Ongoing	ET	LA, SWLEN,
PG10 – Promote wildlife friendly gardening with schools and colleges	Ongoing	FORCE	ET, TCV, SWLEN
PG11 – Promote wildlife friendly gardening with social landlords	Ongoing	SWLEN, ET	LA
PG12 – Engage allotment associations in promoting awareness and best practice in wildlife-friendly gardening.	Ongoing	ET	LA, Allotment associations

8. Relevant Action Plans

8.1 Local

Species and Habitat Action Plans as identified above (Introduction)

8.2 Regional

London Private Gardens Habitat Action Plan, LWT / GIGL

Mayor of London: Parks, Green Spaces and Biodiversity

Mayor of London: Draft London Environment Strategy

8.3 National

National Pollinator Strategy

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10. Abbreviations

- **BCT: Bat Conservation Trust** DEFRA: Department for Environment, Food and Rural Affairs ET: Environment Trust FC: Forestry Commission FoBC: Friends of Barnes Common FORCE: Friends of the River Crane Environment GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority HAP: Habitat Action Plan LA: Local Authority (LBRuT) LBG: London Bat Group LBRuT: London Borough of Richmond upon Thames
- LNHS: London Natural History Society LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust NE: Natural England PG: Private Garden RBP: Richmond Biodiversity Partnership SAP: Species Action Plan SWLEN: South West London Environment Network TLS: Thames Landscape Strategy TRP: The Royal Parks WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

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Appendix

Public information messages

Campaign and information sites have detailed information about many topics. The following are examples of topics for public information through action PG01 above.

- 1. Let grass grow, allow leaves and dead wood to lie, let flowers go to seed
- 2. Plant native species: natives help to sustain the whole system for insects, birds and other wildlife
- 3. Plant a variety of shrubs, especially natives, for hedges
- 4. Make small spaces green with pots and containers
- 5. Choose a variety of insect-friendly plants flowering throughout the year
- 6. Prune or fell trees and shrubs outside of bird nesting and flowering seasons
- 7. Collect and conserve water
- 8. Make ponds, mini-ponds or damp areas
- 9. Leave or make gaps in fences for Hedgehogs
- 10. Minimise lighting: make gardens more friendly for nocturnal wildlife such as Hedgehogs and bats
- 11. Use alternatives to pesticides for slugs and other pests
- 12. Use harmless methods of deterrence for foxes
- 13. Compost garden waste and use sustainable peat-free compost
- 14. Enjoy and learn about wildlife: spotting and recording butterflies, birds, bees
- 15. Build homes for insects, bats, birds and Hedgehogs
- 16. Feed the birds, summer as well as winter
- 17. Involve neighbours and share information and learning



Richmond upon Thames

Habitat Action Plan

Reedbeds



Reedbeds and Bittern at WWT London Wetland Centre © Gary Gray

"Over most of this century the Pen Ponds and its associated reedbed has been a focal point for naturalists, particularly ornithologists. The reedbed, a formerly totally enclosed area, often called the Sanctuary or reserve, has or should have the widest diversity of wildlife anywhere in the Park."

(Barry Marsh, 'The Pen Ponds Reedbed', The Richmond Park Magazine, Autumn 1998)

1. Aims

- To ensure the protection and optimal management of reedbeds in London Borough of Richmond upon Thames (LBRuT).
- To demonstrate the value of reedbeds and to promote their creation and restoration in LBRuT's environment.

2. Introduction

Reedbeds are areas of shallow water dominated by a tall wetland grass called common reed (*Phragmites australis*). The UK's largest native grass, common reed is a particularly conspicuous species, with cane-like stems that last throughout the winter. Reedbeds in LBRuT occur at the margins of all kinds of water bodies and alongside several other habitats, including wet woodlands and willow-dominated scrub.

Historically, the Thames Estuary and basin would have supported extensive reedbeds. Most of LBRuT's natural reedbeds are today confined to a few principal sites, with most owing their existence to planting and restoration programmes undertaken during the course of the 20th century. These man-made reedbeds are associated with a variety of current and post-industrial structures, including restored gravel workings (e.g. M82 Richmond Park's Pen Ponds: from gravel extraction in the 1600s) and redundant reservoirs (e.g. BI 2 Lonsdale Road Reservoir [or Leg o' Mutton] LNR and



M87 London Wetland Centre / Barnes Waterside Pond). Over the course of the last decade, the demand for alternative water treatment applications within London has added further small-scale reedbeds, especially within the most built-up sectors of the capital, to perform multi-functional roles including filtration of nutrients, removal of harmful pollutants and storage of urban run-off and floodwater. There is opportunity for this type of reedbed to become part of the matrix of LBRuT's reedbeds, if the local authorities see a demand for these structures over the course of the 21st century.

Despite the small size of LBRuT's reedbeds, they remain home to many of London's more interesting and regionally uncommon wildlife. Secretive birds such as the water rail, reed and sedge warblers, the rapidly declining water vole, and a host of both drab and colourful invertebrate species, are dependent on the dense cover provided by reedbeds. Historically, London rarities such as the harvest mouse would have undoubtedly utilised this habitat. The current status of this small mammal in the borough is now uncertain and quite possibly has become extinct; however, some of LBRuT's larger reedbed sites might provide opportunities for introduction programmes for the species. Relative newcomers to LBRuT include the enigmatic bittern and Cetti's warbler. The bittern has spent recent winters in reedbeds (e.g. Richmond Park's Pen Ponds, Lonsdale Road Reservoir LNR and London Wetland Centre) only a few miles away from Westminster.

3. Current Status

Across the UK, up to 40% of reedbed habitats were lost between the years of 1945 and 1990. Reedbeds are therefore considered a nationally scarce habitat and are a priority habitat for conservation in the UK Biodiversity Action Plan (Maddock 2008; <u>http://jncc.defra.gov.uk/pdf/UKBAP BAPHabitats-44-Reedbeds.pdf</u>). They are an important habitat for several nationally rare breeding birds in the UK, some of which have bred in Greater London (for example Cetti's warbler and bearded tit). Within the Thames catchment, reedbeds were assessed by the Environment Agency in 2000 to cover 228 ha across 79 sites.

The extent of larger reedbeds in London is estimated at 43.5 ha (0.03% of the Capital's surface area). The total reedbed area is 144.3 ha or *c*. 0.1% of the Greater London area (Waller *et al.* 2017). The largest continuous areas in London occur in the Roding Creek (LB Newham) and the Ingrebourne Valley (LB Havering). LBRuT has five principal sites, notably London Wetland Centre (3.5 ha), Lonsdale Road Reservoir LNR (0.5 ha), Home Park (1 ha), Bushy Park (0.5 ha) and Richmond Park's Pen Ponds (0.5 ha). LBRuT reedbeds thereby form *c*. 5% of the Greater London reedbed audit.

Stands of smaller reedbeds under 0.5 ha were not included in the original LBRuT reedbeds audit, and such areas represent an important additional resource (estimated at forming a further 1 ha of reed cover). These include many of the marginal reedbeds recently established in London's large Victorian ponds, aimed at reducing the highly eutrophic conditions of these urban wetlands (e.g. L11 Kew Pond and L12 Barnes Green Pond). Other examples include the small reedbeds in M76 Crane Park Island LNR and M87 Barnes Waterside Pond (used to be part of the Barn Elms Reservoir site), which despite their sizes respectively support a thriving population of water voles and reed warblers.

The transient nature of reedbeds underlies the importance of regular re-surveys to retain an accurate overview of the habitat resource across the borough; for example, reedbeds discovered from the GLA audit in 2001 (e.g. damp pastures east of M84 Hampton Court Park and an abandoned filter bed in the Hampton Treatment Waterworks close to M85 Stain Hill Reservoirs), as well as drying out reedbeds that run the risk of being lost (e.g. on M83 Ham Lands LNR).

To counter their decline, there is growing pressure nationally to plan for the creation of reedbeds wherever this might be appropriate, often backed by financial incentives. Good examples of habitat creation within the borough include the London Wetland Centre, at Lonsdale Road Reservoir LNR, Crane Park Island LNR, Beverley Brook on Barnes Common and at Ashlone Wharf, Bushy Park and



Richmond Park's Isabella Plantation. Future planned reedbed restoration (e.g. Richmond Park's Pen Ponds) and creation schemes (e.g. M31 River Thames and BII 9 Beverley Brook) might well reverse the decline of what was a trademark feature of both the borough's and London's landscape.

Other pond sites in the borough, which have been identified as containing small reedbeds would include M82 Richmond Park's Dan's Pond and Holly Lodge Pond, M82 Palewell Common, M84 Bushy Park, BI 1 Royal Botanic Gardens Kew, L3 Pensford Field and L13 Ham Pond. Furthermore, there are a few schools in the borough with ponds containing reeds including Sheen Common Vineyard School, Collis School and Hampton Wick School.

4. Specific Factors Affecting the Habitat

4.1. Sea level rise

The projected rise in sea level may lead to a net attrition of created reedbeds proposed for the Arcadia project (e.g. Marble Hill House) along the tidal reaches of the River Thames, through physical erosion and changes in salinity. Opportunities for flood defence realignment (and associated reedbed creation) are severely limited on the tidal Thames in most of Greater London, although in LBRuT there have been past proposals for such a scheme in part of Ham Lands.

4.2. Development and habitat loss

Extensive reeds would have marked every major tributary's floodplain, delta and creek mouth, prior to the widespread land drainage and flood defence schemes essential to the development of the modern city. The majority of LBRuT's reedbeds are afforded some protection as part of London SINCs and under the borough's Local Plan (Core Strategy; http://www.richmond.gov.uk/media/11612/core_strategy-3.pdf). Although development is unlikely to directly have an impact on reedbeds, one or two have had past developments occur in close proximity to them e.g. Barnes Waterside Pond.

4.3. Water quality

Pollution of freshwater affects reedbeds, and can result in amphibian and fish kills, the accumulation of toxins in the food chain, and excessive eutrophication, causing the reeds to die back. The high volume of storm-water runoff from the non-absorptive surfaces of the built environment is an additional source of pollutants particularly associated with the urban situation. This could not only have an impact on any newly created reedbeds on the River Thames as part of the Arcadia project, but also on reedbeds in water bodies that take top-up water directly from the River Thames e.g. Kew Pond, Lonsdale Road Reservoir LNR and London Wetland Centre.

4.4. Water quantity

Many London watercourses experience low freshwater flows in summer due to over-abstraction upstream. On the tidal Thames and creeks, this raises salinity levels further upstream, which could damage freshwater plant communities (e.g. any reedbed creation on the Thames as part of the Arcadia project). Low flows can also dry out marginal vegetation, increasing the speed of natural succession with the onset of scrub and woodland colonisation (e.g. the dry reedbed on Ham Lands LNR).



4.5. Management issues

The RSPB identified management neglect as the major contributing factor leading to reedbed losses across the UK at the tail end of the 20th century (Hawke & José, 1996). Inappropriate management includes lack of intervention in wet woodland colonisation. For example, the cause of the diminishing area of reedbed at Pen Ponds and along the River Crane has been identified in part due to encroachment into the reeds of alder / willow carr. More advice on reedbed management can be found elsewhere (White 2009, https://www.rspb.org.uk/Images/Reedbed_management_tcm9-255077.pdf ; Sussex Wildlife Trust 2013, https://www.rspb.org.uk/images/Reedbed_management_tcm9-255077.pdf ; Sussex Wildlife Trust 2013, https://www.rspb.org.uk/create-and-manage-reedbeds-2.pdf).

4.6. Problem species

Reedbeds are particularly vulnerable to problems caused by invasive, non-native species. These include overgrazing of recently planted or cut-over reeds by Canada geese, and bank destabilisation by Chinese mitten crabs (which have been found in a number of water bodies located adjacent to the River Thames).

4.7. Recreational activities

Water-based recreation is increasing in popularity, including angling and waterborne transport. Unless managed carefully, this can disturb reedbeds and their wildlife, for example by disrupting breeding birds. During summer, increased public access could leave drier reedbeds more vulnerable to deliberate or accidental destruction by fire.

4.8. Public perception

Small, urban reedbeds are likely to be perceived as lacking any substantial biodiversity value, particularly as their associated wildlife is typically elusive. Reedbeds may even be viewed as unsightly (trapping wind-blown or tidal rubbish, and blocking views to open water). Some anglers may forget the importance of reedbeds as fish spawning grounds and view them as a hazard, which entangles fishing line and prevents clear line casting. Furthermore, landowners tend to see no economic benefits for retaining reedbeds within an agricultural context, although the Countryside Stewardship Scheme has subsidised reedbed management in a number of the London boroughs.

5. Current Action

5.1. Legal status

All of the larger reedbeds identified in the LBRuT audit, as well as most of the smaller examples, are included within Sites of Importance for Nature Conservation (SINC). There will remain some smaller reedbeds that are not protected through the planning system, especially those within wetland creation schemes in recently completed developments.

Some reedbed sites receive statutory protection as Sites of Special Scientific Interest (SSSI) and/or Local Nature Reserves (LNR). SSSIs with important reedbeds include the London Wetland Centre, Home Park & Bushy Park and Pen Ponds in Richmond Park, with the latter location also lying within a National Nature Reserve. Meanwhile, Lonsdale Road Reservoir, Ham Lands and Crane Park Island have been notified as LNRs.

Specially protected species often associated with the habitat in LBRuT include not only kingfisher and water vole, but also less frequently grass snake and great crested newt. Both the bittern and Cetti's warbler are now regular wintering species at the London Wetland Centre, with occasional wintering records of bearded tit also being made at the same site over the past decade. Cetti's warbler is now also part of the regular breeding bird assemblage at the site.



5.2. Mechanisms Targeting the Habitat

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

5.2.1 Management, creation and guidance

In most protected sites, there is a clear priority to maintain the integrity of their reedbed habitats by monitoring both water level and quality. None of LBRuT's reedbeds are large enough to be harvested traditionally. However, some rotational cutting is undertaken in nature reserves both for the benefit of the reedbed faunal assemblage and to prevent loss of reedbed habitat from encroachment by wet scrub or woodland (e.g. the London Wetland Centre, Lonsdale Road Reservoir and Crane Park Island Nature Reserve). There are also examples of organisations that have put resources into reedbed restoration projects, for example Pen Ponds reedbed in Richmond Park.

Many smaller reedbeds have been planted to improve the biodiversity and water quality of more established urban wetland features, such as in ponds of some of the borough's formal greens (e.g. Barnes and Kew Greens) and gardens (e.g. Isabella Plantation in Richmond Park). Habitat creation schemes have also included restructured watercourses (e.g. Beverley Brook on Barnes Common and Ashlone Wharf). Others are planned to form part of wider landscape restoration schemes alongside the River Thames, such as the Thames Landscape Strategy's Arcadia project. Boardwalks have been constructed to allow access and improved interpretative opportunities at a number of sites e.g. the London Wetland Centre.

Several agencies have produced guidance documents to encourage the management and creation of reedbeds, including the RSPB/EN leaflet `Reedbed Management for Bitterns` and the handbook `Reedbed Management for Commercial and Wildlife Interests` (Hawke & José, 1996). Also, 'Reedbed Conservation in London' (Bullock & Hunter 2007).

5.2.2 Bittern recovery project

In 1996, English Nature launched its Action for Bittern (Species Recovery) Project, with EU LIFE funding available to landowners and NGOs for reedbed management and restoration. Further impetus to this recovery came about through projects including 'Bringing Reedbeds to Life: Creating & Managing Reedbeds for Wildlife' (White et al. 2013). Bitterns are now showing signs of recovery in some parts of the UK. They have regularly over-wintered in LBRuT's reedbeds for the past 15 winters (e.g. Richmond Park's Pen Ponds and the London Wetland Centre), and creation of new reedbeds elsewhere in the borough would serve to enhance habitat continuity.

5.2.3 SUDS and Bioremediation Schemes

Another driver for reedbed creation is the growing interest in Sustainable Urban Drainage Systems (SUDS) and bioremediation schemes. However, their wildlife value can often be compromised by the temporary nature of the schemes. Nevertheless, they remain important steppingstones along wildlife corridors for species strongly associated with the habitat.

Policies requiring SUDS schemes within new developments are now often feature in planning policy documents and guidance.



6. Flagship Species

These special plants and animals are characteristic of reedbeds in LBRuT.

Water vole Arvicola terrestris Bittern Botaurus stellaris	The "water rat" of the literary classic "The Wind in the Willows" is often mistaken for the brown rat. However, the water vole has a blunt nose, a shorter hairy tail and a pair of small ears tucked away within its fur. It is Britain's fastest declining mammal, yet some of its UK strongholds are associated with London reedbeds. Good populations occur in reedbeds at Crane Park Island LNR and London Wetland Centre. With establishment and restoration of reedbeds at Bushy Park and Home Park, it is hoped that water vole populations might return to the Longford River. A secretive and rare bird that breeds in large, secluded reedbeds. However, smaller reedbeds, including Pen Ponds and London Wetland Centre, can provide important refuges for over-wintering bitterns from both the UK and the continent. They feed on fish, amphibians, small mammals and large insects, especially among the reedbed margins.	©Paul Gregory
Reed warbler Acrocephalus scirpaceus	Although they can be hard to spot among the reeds, the noisy chattering song of these summer visitors can be heard in the borough's larger reedbeds e.g. Pen Ponds, Lonsdale Road Reservoir and London Wetland Centre. Although they are attracted to quite small reedbeds, they do need undisturbed areas of dense vegetation in which to build their nests. They feed on the abundant insect life of the wetland edge habitat.	©Mike Waite
Common eel Anguilla anguilla	Eels are an important food source for many animals, in particular herons and bitterns. Eels are one of a number of fish for which reedbeds provide important shelter on the edge of the open water. They breed in the sea and the young migrate up the Thames and streams and overland to colonise Richmond's freshwater bodies where they grow for at least 15 years before maturing.	©Nick Giles



Ruddy darter Sympetrum sanguineum	A beautiful dragonfly with bright crimson-red males. It is scarcer than the closely-related common darter, but occurs in some of Richmond's wetlands inhabiting shallow, still water where there is an abundance of bulrushes amidst reeds and other emergent plants.	©Rich Bullock
*Twin-spotted wainscot Archanara geminipuncta	This species is representative of a large community of resident reed-feeding wainscot moths. It spends the winter as an egg. The caterpillar then feeds (head upwards) and pupates within reed stems. Adults fly from August to mid-September and have a distinctive pair of white spots on their forewings.	©Tim Freed
Common reed Phragmites australis	The key species of the reedbed habitat - tall stands of reeds, with large purplish flower- heads, which rustle in the slightest breeze. Reedbeds provide shelter, nest-sites and food for a very wide range of wildlife.	©Nigel Reeve

*Some additional notes:

Other moths partly or wholly dependent on common reed in the London area that would also benefit from the action plan would include: the macro-moths Southern wainscot, large wainscot, fen wainscot, silky wainscot and brown-veined wainscot, and the micro-moths *Schoenobius gigantella* (Nationally Notable) and *Chilo phragmitella*. There are also a number of moths that would benefit from the presence of bulrushes, yellow iris, and other emergent plants that grow within and around reedbeds. These would include: the bulrush wainscot, Webb's wainscot and the small rufous. The inclusion of willow would benefit the cream-bordered green pea and lunar hornet clearwing.



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7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)				
Action	Target Date	Lead	Other Partners	
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS	
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA	
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	2019	LA, SWLEN, Working groups	gla, ne, wlo	
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS	
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups	
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP	
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media	
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS	
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups	
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups	



Specific actions targeting reedbeds					
(Targets / Strategic Goals for reedbeds have been adapted from JNCC and Defra 2012.)					
Action	Target Date	Lead	Other Partners		
Target / Strategic Goal 1 (biodiversity benefits and ecosystem services; reduce biodiversity pressures; biodiversity sustainability): To increase LBRuT's overall reedbed habitat resource (7 ha [6ha large; 1 ha small]) by 25% (1.75 ha) by 2025.					
RB01 – Promote use of reedbeds to developers, planning authorities and schools	Ongoing	LA	Landowners, developers, EA, WWT		
RB02 – Establish 5 new larger sized (Surrey/GLA criteria 0.25/0.5ha to ≤2ha) reedbeds where opportunities occur and in areas of known deficiency	2025 (part achieve d)	LA	EA, Site managers, landowners, RBGK, developers, TRP, FG, HRP, TLS, TCV, TW		
RB03 – Ensure that reedbed restoration management in Richmond Park's Pen Ponds establishes an overall increase in total reedbed area	Ongoing	TRP	NE, FG		
RB04 – Implement ≥3 reedbed creation projects each of 20m ² or larger	2021	TLS	LA, EA, TCV, FG		
RB05 – Assess feasibility for the establishment of a large-sized reedbed (e.g. Surrey criteria ≥2ha) in LBRuT	2022	Working Group	EA, Site managers, landowners, TW developers, RBGK		
Target / Strategic Goal 2 (safeguarding ≥20m ² within LBRuT are under appropriate	biodivers e manager	ity): To ens nent and en	ure all reedbeds of hancement by 2025.		
RB06 – Ensure management plans are produced for all newly created reedbeds	2025	TLS	LA, Site managers, EA, landowners, developers, HRP, TRP, TCV, RBGK		
RB07 – Undertake condition assessment of all reedbeds ≥0.5ha and all smaller reedbeds on SINC sites	2022	LA, GiGL	GLA, HRP, TRP, TLS, WWT		
Target / Strategic Goal 3 (mainstreaming, knowledge & capacity): provision of cultural and ecological interpretation at all key reedbed locations to raise and enhance public awareness, knowledge and understanding of reedbeds by 2025.					
RB08 – Develop an annual programme of reedbed-focussed events and activities across LBRuT	Ongoing	Reedbeds Working Group	RBGK, Schools		
RB09 – Publish a promotional leaflet on LBRuT's key or accessible reedbeds	2022	Reedbeds Working Group	FG, RBGK		
RB10 – Promote the potential for introduction / recovery programmes for future flagship species, which utilise larger reedbeds, but are now rare or extinct in LBRuT e.g. Water Vole, Harvest Mouse, Grass Snake, Marsh Sow-thistle, etc.	Ongoing	WWT	EN, EA, GLA, LA, LWT, TRP, TLS		



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RB11 – Assess feasibility for Water Vole re- introduction at key sites in LBRuT containing larger stands of reedbeds	2022	HRP, TRP	EA, NE, WWT, LA, TLS, FORCE
RB12 – Aim to undertake ≥5 reedbed	2025	WWT	Reedbeds Working
related walks and talks per year in LBRuT			Group
(achieving ≥35 over the period)			

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9. Abbreviations

BCT: Bat Conservation Trust LTWGS: London Tree and Woodland Grant DEFRA: Department for Environment, Food Scheme and Rural Affairs LWT: London Wildlife Trust EA: Environment Agency **NE: Natural England** NGO: Non-Governmental Organisation FC: Forestry Commission FG: Friends Groups including: FBC, BPWG, **RBGK: Royal Botanic Gardens Kew** RPWG, HPWG, LRMG, FORCE, etc. **RBP: Richmond Biodiversity Partnership** FoBC: Friends of Barnes Common RSPB: Royal Society for the Protection of FORCE: Friends of the River Crane Birds Importance for Nature Environment SINC: Site of GA: Generic actions Conservation GIGL: Greenspace Information for Greater SUDS: Sustainable Drainage Systems SWLEN: South West London Environment London GLA: Greater London Authority Network **HRP: Historic Royal Palaces** TLS: Thames Landscape Strategy TRP: The Royal Parks LA: Local Authority (LBRuT) LBG: London Bat Group TW: Thames Water LBRuT: London Borough of Richmond upon WLO: Wildlife Liaison Officer (Metropolitan Thames Police) LNHS: London Natural History Society WWT: Wildfowl and Wetlands Trust LNR: Local Nature Reserve

10. Contact

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Richmond upon Thames

Habitat Action Plan

Rivers and Streams



© Eniko Blitzer

1. Aims

- To improve the ecological value of rivers and streams in London Borough of Richmond upon Thames (LBRuT).
- To increase public knowledge and appreciation of the value of rivers and streams in LBRuT.

2. Introduction

This plan considers the habitats provided by the rivers and streams (other than the River Thames) within LBRuT. The relevant rivers and streams include:

- Beverley Brook
- Lower Duke of Northumberland's River
- Longford River
- Portlane Brook
- River Crane
- Whitton Brook (also known as Birkett's Brook)

These rivers and streams are all direct tributaries of the River Thames, apart from the Whitton Brook which flows into the Crane.

Two of the rivers, the Lower Duke's and Longford, are artificial, having been originally constructed to convey water to Syon House in the 16th century, and Hampton Court in the 17th century, respectively. As a result these two rivers do not have drainage catchments feeding them.



There are a number of other small streams within the borough that are not currently well known or appreciated – and one objective will be to identify these and see if they can be improved. One example is Cross Deep, an old stream that had been a feature of Horace Walpole's house at Strawberry Hill and, although it has since been culverted at this location, it still appears above ground through Strawberry Hill golf course.

The habitats associated with rivers and streams include the river channel and margins, along with any green corridor through which the river or stream flows. Rivers and streams are particularly important in urban environments such as LBRuT because of their linear undeveloped character, providing wildlife corridors through the borough that can also link other larger habitat areas together.

The Rivers and Streams HAP sits closely with these other LBRuT plans:

- Tidal Thames HAP
- Reedbeds HAP
- Water voles SAP
- Bats SAP
- Black Poplar SAP
- Tower Mustard SAP

Rivers and streams support a variety of related habitats in the borough in addition to reedbeds – such as marginal wetlands, wet meadows and wet woodlands for example – and these are included within the scope of this plan.

All of the borough's rivers and streams flow into and/or out of other London boroughs. The habitat values are therefore shared with these other boroughs and are also influenced by each other. The linkages with the habitat in upstream and downstream boroughs, created by these river corridors, contribute greatly to the habitat value within the borough.

3. Current Status

The River Crane catchment includes the lower Duke of Northumberland's River, which is an artificial channel flowing from the Crane in Twickenham to the Thames in Isleworth, and the Whitton Brook, which is a small tributary rising in Whitton and joining the Crane in St Margarets.

The River Crane rises 20 km to the north of the borough in LB Harrow and flows through the boroughs of Ealing, Hillingdon and Hounslow before entering LBRuT in Crane Park. The river creates a 6km green corridor through the borough before flowing into the Thames in the LB Hounslow at Isleworth. The final kilometre of the river is connected to the Thames and tidally influenced, providing a major (and potentially the only) significant area of freshwater creek habitat for the tidal Thames. Most of the River Crane corridor is designated as a Metropolitan Site of Importance for Nature Conservation.

The Lower Duke of Northumberland's River, although an artificial channel, has considerable environmental value and is designated as a Borough level SINC. It flows for around 2km through LBRuT before going through LB Hounslow and into the Thames in Isleworth.

The Longford River is another artificial channel, constructed to bring water to Hampton Court. It brings water from the River Colne, around 10 km to the north west, to feed the channels, streams, lakes, ponds and fountains of Bushy Park, Hampton Court and Home Park, and is included as an intrinsic part of the Bushy Park and Home Park SSSI.

The Portlane Brook is a small stream with tributaries in Spelthorne and Feltham, which passes through several Thames Water sites including Kempton Nature Reserve- a SSSI, European SPA



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and International Ramsar site. Once it enters Richmond, south of the Shepperton railway line, it forms the western boundary of the borough, and of the Greater London area. It joins the Thames to the west of the Hampton reservoirs, at Grand Junction Island.

The Beverley Brook is the only significant surface water course on the southern side of the River Thames within the borough. It rises near Stoneleigh in LB Sutton and flows through the boroughs of Kingston and Merton before entering the borough in Richmond Park, where it is a key part of this SSSI. The river flows for around 6km through LBRuT, continuing through Palewell Common and Barnes Common, before entering the Thames to the north of Putney in LB Wandsworth.

These are urban rivers and subject to associated river engineering, water pollution and encroaching development risks. Nevertheless, they are also considerable environmental assets for the borough, sometimes overlooked compared to the Thames and yet with their own distinct environmental value. They are important fisheries, containing large numbers of coarse fish as well as eels, recently re-introduced to the Crane, Beverley Brook and Longford via new eel passes from the River Thames.

Water voles are present on the Crane, Longford and Duke of Northumberland's Rivers, and the corridors provide essential movement and feeding routes for bats and kingfishers. Other riverside species of interest include: water shrew; harvest mouse; reed warbler; water rail; little grebe; water crowfoot; sand martin; Daubenton's bat and the ruddy darter dragonfly.

4. Specific Factors Affecting the Habitats

Pollution is a significant factor in all these rivers and streams. There are ongoing chronic pollution problems, with causes such as: consented outflows from sewage treatment works; "misconnections", where waste water from domestic (and other) properties is connected into the surface water drainage system; polluted run-off from roads; and small scale illegal discharges into surface drains. In addition there is a constant risk to all of these rivers from major pollution incidents, caused by failures of the sewerage system and major transport incidents for example. Pollution impacts may be from within LBRuT and can also flow into the borough from upstream parts of the catchment.

The rivers are vulnerable to low flows during periods of drought, and flood impacts following periods of heavy rain. Droughts can result in rivers such as the lower Crane drying completely, and all rivers become increasingly vulnerable to oxygen depletion and fish kills following an extended period of warm and dry weather. Flood flows can result in the flushing out of fish from the river system, particularly where there are no backwater refuge areas. The severity of these impacts increases in response to both climate change and an increased amount of impermeable cover (e.g. roofs, concrete, and tarmac) within the surrounding and upstream drainage catchment.

River engineering, particularly in the middle part of the last century, has resulted in large parts of the natural river being divorced from any marginal or flood plain habitat, in concrete or wooden toe boarded river channels, often straightened, overly deep and/or overly wide. The two artificial channels (Longford and Duke's River) are also largely devoid of marginal habitat, although in places this has developed subsequent to their construction.

Barriers, such as weirs and sluice structures, create restrictions to the migration of fish within the rivers, and also between the rivers and the Thames.

In many places the river margins are not managed to optimise the river or marginal habitat. Overshading with trees and bushes for example can lead to dark river corridors where little or no instream or marginal flora is able to develop.

Dark night-time corridors, with little or no artificial light penetration, are essential foraging habitat for bats. In many places these corridors are (or are at risk of) being compromised by the use of security and amenity lighting from adjacent developments.



River corridors can be conduits for the spread of invasive species. There are major problems with the invasion of Himalayan balsam, giant hogweed, crassula, floating pennywort, and Japanese knotweed along river corridors within the borough. There are also problems and risks associated with Chinese mitten crabs, American signal crayfish and mink for example.

Much of the open space habitat within the borough is associated with river corridors, and has some level of development protection allocated to it such as Metropolitan Open Land or higher. At present this should mean it is protected from development. Nevertheless, there are prime development sites adjacent to the rivers and streams in the borough – potentially where a pre-existing moribund site is proposed for re-development or a new and larger scheme is proposed. There may be opportunities for river improvement associated with these, but also risks of further encroachment and light spill for example. Smaller infill developments can also fall into this category. Major development proposals in other boroughs can also impact on the value of the overall river corridor, with knock on effects within the borough.

Public access to river habitats in urban areas is generally to be encouraged. However, increased public access does also bring increased risks and pressures. Problems result from litter and pollution as well as disturbance of wildlife by people (and often by their dogs). Measures have been introduced locally to mitigate these impacts – local Friends groups organise litter clear ups and encourage pro-social litter removal by the wider community; wildlife friendly areas are designated and/or created informally in some parts of the river corridor where access by people and dogs is discouraged – often by the use of natural barriers supported by public information.

5. Current Action

All of these rivers are included within catchment partnerships or other groupings, and these help to co-ordinate the management of the river corridor and support river improvement schemes. The Crane Valley Partnership (CVP) was formed in 2005 and includes LBRuT, GLA, Environment Agency, Heathrow Airport Ltd and Thames Water, as well as representatives from the four other boroughs in the catchment and many third sector organisations, including London Wildlife Trust and FORCE. CVP looks after the Lower Duke of Northumberland's River, Whitton Brook, Longford River and Portlane Brook as well as the River Crane – though until recently much of the focus has been upon the Crane itself. Green Corridor, a community and environmental charity based in Hillingdon, chairs the organisation.

The Beverley Brook Partnership includes LBRuT and each of the four other catchment boroughs. South East Rivers Trust is the Chair.

The Thames Landscape Strategy was launched in 1994 and covers the river between Weybridge and Kew, including much of the river within LBRuT, and is also the lead party for the Richmond Tidal Thames HAP.

Plans and activities for the CVP are set out in the Crane Catchment Plan, endorsed by the Environment Agency. There is no catchment plan as yet for the Beverley Brook. All the borough's rivers are covered by the relevant parts of the GLA's All London Green Grid. These documents set out the current value of the rivers and streams in the borough as well as listing improvement projects proposed. Other projects can be found in the GLA's London River Restoration Strategy. Blue Ribbon policies by the GLA, endorsed and extended in the borough's Local Plan, provide a framework of policy and protections.

LBRuT's Local Plan includes policies for the protection and enhancement of river corridors as important wildlife features and local community assets. Any development local to these assets is expected to provide benefits to them.

Works are being delivered on the ground by a wide variety of organisations, normally with the active engagement and endorsement of the Environment Agency as the permitting regulator.



ZSL has undertaken a number of projects to install eel passes, linking these tributaries again to the tidal Thames, and fish passes may follow in the future.

The Citizen Crane project has pioneered the use of citizen scientists to monitor the ecological and chemical quality of the River Crane and, working alongside Thames Water and the Environment Agency, has overseen improvements in the chronic pollution loads coming into the river. Similar approaches have been trialled on other London rivers including the Beverley Brook.

6. Actions

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GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP	
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media	
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS	



GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups

Specific actions for rivers and streams				
Action	Target Date	Lead	Other Partners	
RS01 – Set up a Rivers and Streams working group to liaise, identify key issues and share best practice. Ensure this group liaises effectively with other HAP and SAP groups such as Tidal Thames; Bats; Water voles; Reedbeds. In practice this may best be achieved by working in close co-ordination with one or more of these other groups	2019	RS HAP Lead	LA, WWT, FBC, RP, TLS, SERT, FORCE etc	
RS02 – Provide an effective means to link the working group members with other activities and opportunities across London – such as Catchment Partnerships in London; individual catchment partnerships; etc.	2019	Working Group	CPiL, CVP, BBP, EA	
RS03 – Identify opportunities to incorporate protections and improvements to the rivers and their corridors through borough mechanisms such as the Local Plan; Village Plans; Vision Plans and CIL lists for example	Ongoing	LA and Working Group		
RS04 – Work with LBRuT planners and potential developers to identify and implement improvements to the river corridor that will ensure net environmental benefits are derived from any development. This will require early notification from potential developers and/or LA about any possible developments that may affect a river corridor.	Ongoing	LA, working group and developer	CVP and BBP	
RS05 – Identify means to better support those rivers without co-ordinated support at present, viz the Longford River (particularly upstream of Bushy Park) and Portlane Brook. This may include more active inclusion within existing partnerships and/or the creation of new friends groups and/or partnerships. Target one improvement project on these rivers per annum.	2019	Working Group	CVP	



RS06 – Promote means to more effectively monitor and assess the value of the river system through mechanisms such as RMI monitoring; outfall safaris; Urban River Surveys etc. Support the implementation of at least one per annum.	Ongoing	Working Group	CVP, BBP, EA, TW
RS07 – Target the implementation of two significant marginal habitat improvement projects per annum – each providing at least 50m of river bank improvement.	Annual from 2019	Working group	CVP, BBP, EA
RS08 – Investigate the potential to deliver large scale river restoration in the Lower Crane catchment – incorporating an improved low flow regime. Target of delivering small scale improvements from 2019 with large scale potentially to follow.	Ongoing from 2019	FORCE, CVP, EA, LA	Working Group
RS09 – Target the removal or mitigation of one significant fish and/or eel migration barrier per annum.	Annual from 2019	Working group	CVP, BBP, EA
RS10 – Evaluate the key issues regarding invasive species and target the removal or reduction of priority species in at least one river.	Annual from 2019	Working Group	CVP, BBP, EA
RS11 – Target the distribution of public information on one significant benefit or concern related to rivers and streams each year – e.g. misconnections; hard standing; invasive species etc.	Annual from 2019	Working group	CVP, BBP
RS12 – Work with LBRuT and others (such as the GLA and EA) to incorporate new and/or enhanced policy approaches to key concerns and opportunities such as river restorations; misconnections; hard standing; invasive species etc – undertaking at least one per annum.	Ongoing	LA, Working Group, CVP and/or BBP	CVP and BBP
RS13 – Work with TW, LA and others (such as developers) to develop a biodiversity rich approach to SUDS schemes – implement at least one per annum from 2019	Ongoing from 2019	Working Group, TW, LBRuT	Developers
RS14 – Work with LA, TfL and Highways Agency to better understand the impact of road run-off on the river ecosystem. Implement at least one remediation/improvement scheme per year from 2019.	Ongoing from 2019	Working Group, LBRuT, TfL, HA	



RS15 – In the absence of habitat plans for river floodplain habitats such as wet meadow, river valley ponds and scrapes, and wet woodland; include these habitats in the Working Group discussions. Implement at least one habitat creation or improvement scheme per annum for these habitats.	Ongoing from 2019	Working Group	Other landowners and a range of partners
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7. Relevant Action Plans

7.1 Local Plans

Tidal Thames, Reedbeds, Water Voles, Bats, Tower Mustard and Black Poplar.

7.2 London Plans

The Tidal Thames, Rivers & Streams, Reedbeds.

8. Abbreviations

BCT: Bat Conservation Trust LNHS: London Natural History Society **BBP: Beverley Brook Partnership** LTWGS: London Tree and Woodland Grant CIL: Community Infrastructure Levy Scheme **CPIL:** Catchment Partnerships in London LWT: London Wildlife Trust **CVP: Crane Valley Partnership NE: Natural England RBP: Richmond Biodiversity Partnership** DEFRA: Department for Environment, Food and Rural Affairs **RP: Royal Parks** RS: River and stream EA: Environment Agency FBC: Friends of Barnes Common SAP: Species Action Plan FC: Forestry Commission SERT: Trust South East Rivers FoBC: Friends of Barnes Common SINC: Site of Importance for Nature FORCE: Friends of the River Crane Conservation SPA: Special Protection Area Environment SSSI: Site of Special Scientific Interest GA: Generic actions GIGL: Greenspace Information for Greater SWLEN: South West London Environment Network London GLA Greater London Authority TfL: Transport for London HAP: Habitat Action Plan TLS: Thames Landscape Strategy **TRP: The Royal Parks** LA: Local Authority (LBRuT) LB: London Borough of TW: Thames Water LBG: London Bat Group WLO: Wildlife Liaison Officer (Metropolitan LBRuT: London Borough of Richmond upon Police) Thames WWT: Wildfowl and Wetlands Trust ZSL: Zoological Society of London

9. Contact

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Richmond upon Thames

Habitat Action Plan

Tidal Thames



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1. Aims

- To form a Tidal Thames steering group of landowners and key stakeholders
- To assess identified wildlife habitats and species of the tidal Thames, to give us a baseline and identify areas of improvement including updates to surveys more than 10 years old
- To ensure no net loss of habitat diversity and ensure targeted net gain within the London Borough of Richmond upon Thames (LBRuT)
- To ensure the improvement, regeneration and integration of tidal Thames habitats
- To contribute to strategic efforts to deliver biodiversity conservation targets for the tidal Thames as a whole
- To promote public education, appreciation and research of the tidal (and non-tidal) Thames within LBRuT
- To obtain data mapping the river bed (geomorphological) within LBRuT to identify opportunities for enhancement for fish and aquatic invertebrates
- To obtain salinity and species data for the waterway
- To improve connectivity between the Thames and its tributaries
- To ensure communication between floodrisk and diversity project planning



2. Introduction

By the time the Thames reaches London it has flowed over 300 km from its source in the Cotswolds; it has however traditionally been known as "London's River", "the Royal River", and "old Father Thames". It has been a landscape of inspiration to the capital for two thousand years and the original meaning of the name 'Thames' tells us something about its character. The name is perhaps derived from the Celtic language root Tam, meaning 'dark' or more likely from a pre-Celtic root Ta meaning 'melt, flow turbidly'.

The history of the river in LBRuT is no less important and is evident from finds of Stone Age tools on Eel Pie Island; flint implements and Celtic and Roman pottery on Ham lands. The river has been an inspiration to Alexander Pope and Turner. Its serpentine presence through the borough does much to define its life and character and is symbolised within several of the council's logos. Between Hampton and Kew the Thames is known as the Arcadian Thames. LBRuT is unique among the London boroughs in extending both north and south of the River Thames.

The tidal limit of the Thames is within the borough, at Teddington Lock (although it is noted that this can be breached on extreme high tides), however it is considered freshwater with only a low salinity level at this distance from the sea (estimated at 3-5 parts per million). The western boundary of the Borough extends a further 12 km upstream on the north bank of the river. The London wide Tidal Thames HAP has selected the LBRuT boundary as its western limit as it also represents the western boundary of the Greater London Authority (GLA). This plan will also be extended to include the non-tidal reaches as one of its objectives.

The riverbanks within the Richmond Tidal Thames Habitat Action Plan (HAP) are:

Non-tidal

• The north bank upstream (12 km) of Teddington Lock, to the west end of Hampton Water Works – the interaction between tidal and non-tidal sections of the Thames are significant for species connectivity, migration, flow levels, and transmission of pollutants etc. The non-tidal sections of the Thames in LBRuT must be considered in management and project planning.

Tidal

- The north and south banks downstream (8 km) of Teddington Lock, to the confluence with the River Crane (the boundary with the London Borough of Hounslow)
- The south bank downstream (12 km) to the confluence with the Beverley Brook (the boundary with the London Borough of Wandsworth)
- The LBRuT boundary runs along the centre of the river except where it moves around islands. Some Islands, such as Taggs Island are included and others, such as Isleworth Ait excluded.

The lateral extent of the plan area includes:

- The river bed and the 11 Thames islands within the borough (an updated Islands Management Plan is an objective of this HAP)
- The (short) tidal reaches of associated tributaries but excludes their main fluvial channels. (These will be included in a subsequent "Rivers and Streams HAP" for LBRuT)
- The banks, towpaths and other riverside pathways and associated flood channels, back channels and backlands. This includes rare marginal habitats of flooded forest and wet woodland.



- The floodplain. For example Petersham Meadows is within the current flood plain and Ham Lands, which may be returned to functioning floodplain as part of on-going projects like The Restoration of the Lost Floodplain and The River Thames Scheme.
- The LBRuT section of the river is part of the upper "freshwater zone" of the wider Tidal Thames, which stretches downstream through central London to the estuary, and coastal marshes of Essex and Kent.

Current on-going large scale projects that have relevance to the Tidal Thames include:

- The PLA Thames Vision
- Thames Water's Tideway Tunnel and ongoing management plans
- EA flood risk plans TE2100 and The River Thames Scheme Dachet to Teddington
- EA Catchment Management Plans
- Thames Marine Conservation Zone

3. Current Status

3.1 Overview

The River is a valuable amenity to LBRuT residents and visitors and provides a mode of transport for some commercial and much seasonal leisure traffic, and is the setting for one of the western world's most significant historic and cultural landscapes; the Arcadian Thames. It receives much of our treated effluent and urban run-off whilst also providing a vital wildlife corridor for the migration of wildlife between urban parks and green space. Locally, these areas include; the London Wetland Centre in Barnes, Bushy and Home Parks, Ham Common and Lands, Marble Hill Park, Syon Park SSSI, Richmond Park SSSI and Kew Gardens World Heritage Site, Old Deer Park and Royal Mid Surrey Golf Course.

Ecologically the Thames today can be thought of as a recovering ecosystem. In 1957 it was considered almost biologically dead, whilst today its healthy fish stocks indicate its present status as a good quality urban water environment. It was recognised to be one of the cleanest rivers flowing through a European city in 2005. The main reason for this is the additional treatment of sewage effluent, before it is discharged to the tidal reaches, resulting from European and UK legislation. Over 100 species of fish are currently recorded in the wider tidal Thames with reintroduced salmon running up-river beyond Teddington Lock in 1985 for the first time since the 1830's.

The tidal Thames is still far from being a natural ecosystem, with its controlled river course, little natural flood meadow and bank-side housing development. Its main ecological constraint is the hard engineering to stabilise the riverbanks, consisting of sheet piles, cobbled or concrete revetments. These both reduce the variability of the habitat and severely curtail the surface and subterranean flood plain environment. A further impact is the Richmond Half Lock, which retains an artificial high water level over the bottom half of the tidal cycle in the river upstream. This benefits river navigation but reduces the upstream inter-tidal habitat. Benthic zone habitats are extended however, including several mussel habitats.

Although background water quality has improved, there remains the periodic outflow of untreated effluent from combined sewer systems in response to high rainfall events, which result in reductions in water quality. Continued occasional major incidents should be expected without remedial action, particularly given an anticipated increase in rainfall extremes as predicted by 'climate change'. October 2004 saw such an event when a combination of sewer over-flows and antecedent dry weather conditions, resulted in a rapid lowering of dissolved oxygen in the river water and many thousands of fish were killed. Mogden STW was expanded in 2013. The additional capacity to hold storm water means there have been fewer discharges of sewage to the Thames but there is no


additional space for expansion on site and current projections estimate the site has only a few years before additional capacity is needed to cope with increasing demand for sewage treatment.

If allowed to revert to the pre 2013 frequency of discharges– storm water discharges will severely impact water quality in this reach. Importantly, the River through LBRuT will not benefit directly from the Tideway Tunnel. There is also continued large-scale abstraction of fresh water for public water supply from above Teddington Lock. Although this is regulated by a variable minimum flow control at the lock, it still results in reduced fresh water inflows to the tidal reach throughout the year, and potential changes to river ecology during the low flow summer period.

There is potential here for working with Thames Water on sustainable drainage opportunities and public engagement on the relationship between urban drainage and the River. For example projects like *Connect-Right*, *Only Rain in Rivers* and *Unflushables* as well as sustainable drain and storage schemes.

3.2 Specific habitats

3.2.1 River Channel

The river channel habitat is constrained artificially by its hard embankments, resulting in a greater depth and a faster water flow than if the channel was "natural". Although this is largely a tidal reach, the water quality is dominated by the inflow of freshwater from upstream. Marine salinity levels are understood to be low throughout the stretch, although may be elevated in extreme drought periods. Water levels vary according to fresh water inflows and the monthly tidal cycle. Low levels are mitigated, on the tidal reaches upstream, by the outflow regulation of Richmond Half Lock, and the fresh water upstream reaches are maintained by Teddington Lock. The in-stream habitat is subject to the seasonal changes of thermocline, oxygen levels and nutrient flows that in turn determine the algal base of the food chain. Algal blooms affect water clarity and colour and subsequent aquatic micro fauna.

In the wider tidal Thames there are over 100 fish species present. The main river habitat in Richmond supports good fish diversity with over 20 species, probably best represented by bream *(Abramis brama)* - in this 'bream region' of the Thames, with prized angling fish such as barbel *(Barbus barbus)* and introduced efficient predators like zander *(Percidea Stizostedion)*. Some marine species such as flounder *(Platichthys flesus)* use the stretch as a refuge for 3-4 yrs, after which they return to the sea and estuary where they spawn.

In terms of migratory species using the tidal Thames, then these are European eel (*Anguilla anguilla*), sea trout (*Salmo trutta*) and occasional salmon (although the EA no longer specifically monitor for salmonids at the Moseley trap), and smelt.

It is also important to note that the upper tidal Thames, which is freshwater, but tidal, is also an important nursery area for some species of juvenile marine fish, especially sea bass, some mullet and gobies. Sea Bass are an important commercially exploited species in the lower estuary, so the habitat they use through Richmond will be contributing to that marine fishery for bass. It is only the juvenile phase that spends time in the upper tidal areas. As they mature the bass drop back down the estuary and out to sea.

The freshwater fish population is dominated by dace, roach and bream. It is suspected, but not yet proven, that the weirpool habitats at Teddington and Richmond are important spawning areas for the rheophilic Dace. Preserving these areas will be important for these fish populations. It is important to note that the lack of large in-river waterweeds make the existence of marginal vegetation such as submerged tree roots like crack willow (*Salix fragilis*) and the tidally flooded bankside plants, very important refuges and attachment points for fish eggs during and after spawning.



The fishery and its associated invertebrate fauna, is predated by marine and fresh water birds including kingfisher (*Alcedo atthis*), grey heron (*Ardea cinerea*), cormorant (*Phalacrocorax carbo*) and a large number of wildfowl including both great crested grebe (*Podiceps cristatus*) and little grebe (*Tachybaptus ruficollis*). The reach is also visited regularly by otters (*Lutra lutra*), common seals (*Phoca vitulina*) from lower down the estuary, and even bottle-nosed dolphins (*Tursiops truncatus*) and habour porpoise (*Phocoena phocoena*) have been seen as far upstream as Twickenham.

3.2.2 River Bed

There is a considerable seasonal suspended silt load in the river system. This is perhaps enhanced from time to time by dredging activities and flocculation downstream. However, due to the relatively fast flowing nature of the stretch, silt is only deposited in any quantity in minor low flow areas, especially on the Twickenham and Brentford side of the river, where islands interrupt the flow. These conditions provide important transition zone habitats for benthic fauna, including unionid mussel beds; specifically the painters mussel (*Unio pictorum*), the ducks mussel (*Anodonta anatina*), swan mussel (*Anodonta cygnea*) and the less common swollen river mussel (*Unio tumidus*); whilst also providing for the UK BAP priority species the depressed river mussel (*Pseudanodonta complanata*). Also found are invasive species such as the Chinese mitten crab (*Eriocheir sinensis*), the zebra mussel (*Dreissena polymorpha*), quagga mussel (*Dreissena bugensis*) and the Asiatic clam (*Corbicula sp.*). Non-biting midge larvae (*Chironomus sp.*), leeches (*Hirudinea*) and freshwater shrimps (*Gammarus pulex*) are a widespread and an important food source for fish and ducks. The other key riverbed inhabitants, with several species found in the Richmond reaches, are small orb (*Sphaerium sp*) and pea (*Pisidium sp*) mussels.

3.2.3 Banks

The combination of the hard banks and the Richmond Half Lock restrict the inter-tidal habitat within the main channel. Gravel and silt banks are exposed downstream of the lock and provide a good habitat for feeding waterfowl. In a few places, such as on the foreshore of RBG Kew and the Old Deer Park, sea club-rush (*Bolboschoenus maritimus*) and grey club-rush (*Schoenoplectus tabernaemontani*) provide an important habitat that is used as a spawning ground. The channel embankments tend to be uniform with steep faces covered with protective hard rock blocks or sheet piles. This provides a restricted habitat with little marginal vegetation or opportunities for roosting. However the concrete and cobbled revetments are increasingly being colonised by willow (*Salix sp.*) and alder (*Alnus glutinosa*). There are no natural banks currently within the tidal reaches of the borough, such as the tidal flood meadows (protected as a SSSI) outside Syon House in Hounslow on the north bank opposite Kew Gardens, and which provide good habitat for a range of species including reed warblers (*Acrocephalus scirpaceus*)

Recent schemes are attempting to provide more habitat within the channel banks. Local volunteers have installed a softer defence system on the river-side of the flood bank at Kew, consisting of hand built willow stake "living fences" for the retention of silt and the potential development of more natural bank-side habitats and known as "spiles". Recent improvement works at Teddington Lock incorporated soft materials into the new sheet piled banks to allow habitat for soft boring invertebrates and small fish.

The towpath, revetments and associated riverside vegetation forms an important corridor habitat and also represents a key connection to associated habitats such as floodplain and wet woodland. The riparian assemblages of plants in some locations in the borough are some of the best examples in the tidal Thames and are especially important, as they are also rare on the engineered tributaries. However, being close to the towpath, they suffer from badly timed or heavy mowing that has considerably impoverished some habitats. Where they are well managed, a wonderful lush riverside border can still be found, often characterised by plants such as: Great water dock (*Rumex*



hydrolapathum), water speedwell (*Veronica anagallis-aquatica*), hemlock water dropwort (*Oenanthe crocata*), marsh ragwort (*Senecio aquaticus*), water figwort (*Scrophularia auriculata*), purple loosestrife (*Lythrum salicaria*), yellow loosestrife (*Lysimachia vulgaris*) and amphibious bistort (*Polygonium amphibium*).

The private river bank is typically in the form of short grassed gardens with some structures such as offices, water treatment plants or roads.

There are many large and valuable trees along the bank including; crack and weeping willow (*Salix x sepulcralis*), oak (*Quercus sp.*), beech (*Fagus sp.*), and poplar (*Populus sp.*). In both the public and private parts of the embankment these provide good quality habitats for invertebrates, birds and bats.

3.2.4 Islands

There are eleven islands within LBRuT river reaches, ranging from about 10m to 600 m in length. These are largely shored up by lateral sheet piling or wooden camp-shedding. During high tides and flood events parts of the islands are inundated. The islands provide an important range of inter-tidal habitats on exposed shores, shelves or bars at the foot of the sheet piling.

The islands also provide roosting habitat for waterfowl, and occasionally seabirds such as the common tern (*Sterna hirundo*). However due to the vertical piling at low tide, and the foxes and cats that can be present on the larger Islands, ground nesting birds are often unsuccessful. An Island Management Plan was produced by the Thames Landscape Strategy in 2005. An updated management plan for the Thames Islands is proposed as a target of this HAP.

The lack of sites for waterfowl has seen interesting adaptations that include coots (*Fulica atra*) nesting in trees on the little Richmond Aits (Ait being a local name for a Thames island). However it is clear that the only consistently successful nesting sites for water birds (apart from Canada geese), are the floating man-made rafts, mooring buoys or abandoned boats, that ensure that the nests survive the daily tides.

The many mature trees on the Islands, together with ivy (*Hedera helix*) cladding, provide important roosts and nesting sites for the less common species such as great spotted woodpeckers (*Dendrocopos major*), tawny owls (*Strix aluco*) and treecreepers (*Certhia familiaris*). Several bat species also depend on mature trees like broken crack willows with large trunks for roosting sites. As with much of London, sycamore trees (*Acer pseudoplatanus*) dominate some islands; this, especially when ivy clad, provides many good roosts, nests and foraging material. Willow (Salix spp.) species dominate other islands. Barges and other moored artificial structures can also provide good nesting and roosting habitat along the river.

3.2.5 Tidal Tributaries, Flood Channels and Flood Plain

The north bank of the river, except for a short reach alongside Marble Hill House, is largely protected from inundation by a combination of the flood embankment and/or local topography. However, a significant part of the south bank includes backwater and flood channels and reaches such as Petersham Meadows, the lower sections of Ham Lands and Ham and Petersham riverside and the Old Deer Park are set within the 1 in 100 flood defences and include an important range of flood plain Tidal Thames Habitat Action Plan habitats, for example the tidally flooded wet willow woodland in Petersham and nearby backwaters. At present however, little is known of the ecology of these areas or how water moves about on the high spring tides. These are unusual tidal habitats within London and are considered to be of value for fish fry as well as specialised strandline invertebrates and flora. The tidal reaches of tributary rivers such as the Crane and Beverley Brook also provide potential refuge for fish fry. They are also important access points to the Thames for wildlife using these key green corridors to the north and south of the Thames. The floodplain areas of the Thames



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are inundated during periods of high water level resulting from high tides and/or higher fresh water inflows. Parts of the adjacent land are designed as storage areas for flood waters and are only inundated on spring tides. This is facilitated by large sluice pipes passing through the flood embankment to fill back-water channels. The Old Deer Park flood channel creates an exceptional wet woodland / fen, whilst the Royal Botanic Gardens Kew HaHa provides valuable habitat heterogeneity, although it is liable to silting.

The upper reaches of the River Thames are fed with run-off from chalk downland and Cotswold limestone and this calcareous origin is considered to have an important role in the regulation of pH over its flooded and riparian habitat corridor downstream. The raising of the pH through the calcified river water, especially in the modern acid precipitation context, is probably a contributing factor to the existence of rare molluscs (that prefer more alkaline environments for shell development), within the tidal Thames corridor such as the two-lipped door snail (*Lacinaria biplicata*) and the German hairy snail (*Perforatella rubiginosa*), that are found in several regularly flooded sites within the Borough. More research is needed, but indications are that flood prevention has for example, seen previous flood meadows in Kew Gardens developing increasingly acid soils, indicated by a progression towards calcifuge plants. Petersham Meadows is a flood meadow, inundated typically on twice monthly spring tides or following upstream storm events. This is maintained as a meadow by grazing and provides good quality habitat for wet meadow flora.

The Environment Agency has investigated whether it would be possible to lower an area of floodplain that was artificially raised in the 1940's to provide additional flood storage in both their Floodscape proposal and the River Thames Scheme Dachet to Teddington. It was considered in both these studies that at present the benefits of such a scheme were outweighed by the impact the work would have of the existing habitat and did not provide a cost/benefit project.

3.2.6 Wildlife Corridor

One of the key aspects of the LBRuT stretch of the Thames is its functional role as a wildlife corridor locally and as part of the wider Thames corridor. The stretch links the river to other important sites such as the Kempton Park Reservoirs – an SSSI and Ramsar site, Barn Elms wetland site on the south bank, acid heathland of Richmond Park and Wimbledon Common to the south, Bushy Park and Hampton Court to the north. The corridor is an important link between the brackish and marine habitats along the Thames Estuary and the fresh water habitats of the Thames, as well as between the river Crane and Colne. Its location as a key link along these wildlife chains, with access to a range of adjacent sites, increases its richness as an existing habitat as well as its potential if and when new habitat niches are developed.

4. Specific Factors Affecting the Habitat

4.1 Sea Level Rise and Climate Change

Sea level rise is an anticipated effect of climate change and results from the combined impact of the thermal expansion of water and the melting polar ice sheets. The resultant effect is a sea level rise of 2 - 4 mm per year. This effect is anticipated to lead to the loss of some 10,000 hectares of foreshore and mudflat habitat in Britain over the next 20 years. In this borough, it may further reduce the inter-tidal channel bed habitat downstream of the Richmond half Lock.

A further effect of sea level rise is the increased high tides and the consequent higher flood risk to LBRuT. The Environment Agency also has made it clear that it wishes to reduce the operation of the Thames Tidal Barrier as a protective measure for the upper parts of the tidal Thames. This will increase the periods and levels of inundation within the backwaters and associated floodplain habitat, and is one reason for the proposed change in management on the floodplain



The latest evidence on local climate change indicates that summers in the south east of England are becoming warmer and drier whereas winters are becoming warmer and wetter. In addition the variability of the weather is increasing, resulting in increased risk of both floods and droughts. This pattern of change is already in evidence and is expected to continue with the main debate surrounding the intensity of these changes.

There are suggestions in the EA's TE2100 and River Thames Scheme Dachet to Teddington which could see a potential 40% rise in peak flood flow over Teddington Lock. This rise puts the borough at risk from fluvial flooding coinciding with high spring tide. Due to the amount of green space in the borough there are low flood defences and several examples of wide floodplain. The management floodplain in the borough will be of increased importance to ensure floodrisk mitigation long-term.

The broader impact of climate change on the tidal Thames habitat is difficult to gauge. Increased flooding may be a benefit to some habitats. At the same time, the loss of floodplain and channelling of the river may combine with increased flooding to produce very rapid and turbid flow, perhaps resulting in the loss of other riparian and riverbed habitats. This loss can perhaps be ameliorated by sensitive managed retreat and floodplain enhancement schemes. At the other extreme, increased droughts and lower summer fresh water inputs may result in increased stress to the existing flora and fauna, whilst promoting the incursion of estuarial visitors and exotic species.

Flood mitigation and water management must continue to be a priority when deciding on projects and planning proposals.

4.2 Land Ownership and Management Responsibility

The division of ownership and responsibility for the management and maintenance of the public reaches of the tidal Thames bed, banks and backwaters is complex and divided between bodies such as the Local Authority, Port of London Authority and Environment Agency as well as public landowners such as The Royal Parks, RBG Kew, National Trust, English Heritage and others along specific reaches. This has resulted in relatively low land management efforts on these reaches, which may have been to the benefit of the associated habitats in the past, but also inhibits the delivery of potential habitat improvement measures and coherent overall habitat management. In response the Thames Landscape Strategy (which brings together a partnership of all major landowners) produces an annual Towpath Management Plan. Downstream a similar exercise is carried out by the Thames Strategy Kew to Chelsea.

There is even less known about the habitat and species within much of this area, although a plan for the islands has been produced by the Thames Landscape Strategy and is due to be updated through this HAP. It is hoped that further information and dialogue with private landowners will be encouraged through initiatives such as this HAP and other much larger local initiatives such as the National Archives in Kew and sports facilities. Significant landowners in this respect include Crown Estates for the Royal Mid Surrey Golf Club and Thames Water although private householders also manage several sections of the river frontage.

4.3 Development and Planning Controls

Any significant development proposed on either private or public land is controlled by the Local Planning Authority and will be subject to planning guidance under the council's Local Development Framework and local Village Plans, and the Greater London Authority's "London Plan" (current one 2018). The London Plan includes policies on the Thames including reference to the Thames Strategies and policies regarding support of River Restoration, managing flood risk, the Mayor's Cultural Strategy for the River and target based policies for Urban Greening. It is intended that this HAP and associated mapping and surveys will provide guidance to borough planners when considering prospective developments within and adjacent to the tidal Thames area. From a habitat perspective it will be important for prospective developers to show that there will be clear net benefits



to habitat and species strength and diversity from development and contribute towards borough wide net gain of specific habitats. They should also be able to provide targeted mitigation against any net loss by providing comparable replacement. Given the impoverished nature of much of the riverside habitat there is the potential for beneficial net impacts as long as enhancement measures are sensitively designed and long-term management is incorporated.

4.4 Flood Control Structures

The main flood control structures in the borough are the system of embankments, walls and sheet piling. These retain water within the main channel, associated sluices, pipes and back channels that release water into controlled back water areas on high tides, and let it back into the main channel on low tides. This system is primarily for the purposes of flood management, although it results in back waters, flood meadow and wet woodland habitat. However there is be scope for reviewing the operation of this system, and the management of the associated flood plain, to better manage the existing habitat and/or provide additional good quality habitat within the backland area.

These features also result in a constrained river channel, increased flow velocity and water depth and a combination of pools and glides but no riffle sequences within the river. As a consequence, there are no locations where the river is in turbulent flow downstream of Teddington Lock. This controls the distribution of oxygen within the river channel, which is consequently high immediately downstream of Teddington Lock but subject to reductions further downstream. The EA's TE2100 floodrisk plan must be engaged with to explore opportunities for diversity and access through delivery.

4.5 Floodplain Management

As noted above, the management of the floodplain is closely linked to the design and operation of the flood structures, which control the amount and timing of water released into the floodplain area. The management of the floodplain itself is dependent upon the topography and the approach to managing the ground flora. The Old Deer Park for example is managed for recreation as a sports field and consists of close mown grass which, despite being inundated several times per year, has little habitat interest. Petersham Meadows is managed as open wet meadow by the introduction of cattle during the summer to maintain grass levels and control succession plants. This is an interesting habitat for flora and associated species, which is rare within London. The wet woodland adjacent to Royal Mid Surrey Golf Club appears to be essentially un-managed and has progressed over many years to a mature wet woodland habitat, which is also rare within London. Between Petersham and Teddington an interesting wet habitat is evolving on the low lying areas and backwaters including wetlands and wet woodland. In 2008, Sir David Attenborough launched a scheme to identify enhancements to the floodplain – The Restoration of the Natural Floodplain.

4.5.1 EA Floodplans

Relevant Thames Estuary 2100 policies:

Teddington Lock to Kew = P3 Continue with existing or alternative actions to manage flood risk. We will continue to maintain flood defences at their current level accepting that the likelihood and/or consequences of a flood will increase because of climate change.

In the future, areas of unprotected floodplain in west London will flood more frequently as water levels rise. The Thames Barrier will continue to provide tidal flood protection to West London to the same high standard as is enjoyed in all the other areas protected by the Barrier. But over the next 25 years we need to put in place new ways of managing fluvial flooding other than by operating the Thames Barrier.

Kew to Barnes = P5 Take further action to reduce the risk of flooding (now or in the future).



To keep up with climate change and reduce flood risk further, we and others will need to do more to manage and reduce both the likelihood and consequence of flooding, providing a level of flood risk management which is higher still than the standard currently provided. The commercial, economic and historic value of London, as well as the potential for loss of life in the unlikely event of a flood, justifies an increased standard of protection from the current 1:1000 year level to 1:10,000.

Accretion of the river bed is occurring at Barnes and Putney. This may provide opportunities to improve the ecological capacity and appearance of these frontages. There is a risk of fluvial flooding from Beverley Brook which is exacerbated by high water levels in the Thames. There are two diversion culverts, although these are also affected by tide lock from high levels in the Thames. Floodplain management may also be required for groundwater flooding. This has not been considered in detail by TE2100 and further investigation will be needed in the future.

4.6 Barriers and Locks

The Thames Barrier lies downstream of central London and well outside the Borough, but it has a vital role to play in the protection of the Borough from flooding. It is likely that, in the future, more use will be made of local spaces and less reliance placed on the Barrier. Other opportunities to develop wetland habitat as part of local flood management are possible Richmond Half Tide Weir retains artificially high water levels for the lower half of the tidal cycle. This results in still water conditions for half the tidal cycle and reduced inter-tidal habitat exposure. This lock may have an impact on sediment movement but is unlikely to significantly impede fish migration as it is breached twice daily. Teddington Lock is actually a major weir structure with an associated lock for the movement of river transport. The impact of this structure on the migration of fish is not known at present. The Tidal Thames HAP is a good vehicle for considering fish passage (all species) between the main channel and the tributaries.

Eels are covered Under 'The Eels (England and Wales) Regulations 2009', which obliges owners of structures to mitigate their impacts on eel migration by installing eel passes. This has been done by the EA and ZSL at Kidds Mill Sluice (Duke of Northumberland's River), Ashlone Wharf (Beverly Brook) and Teddington Lock.

The passage of eels and other species of fishes into the lower Crane for example, is currently restricted by a number of structures please refer to the Crane Valley Partnership report for more information. Further opportunities for fish passage and in-stream enhancement will be explored and implemented through this HAP.

4.7 Water Quality

Whilst it is generally acknowledged there has been a major improvement in background water quality in the tidal Thames over the last forty years, a detailed analysis of the base data has not been undertaken. There is a constant high input of nutrients with resulting high biochemical oxygen demand (BOD) from the major treated effluent of Mogden Works - discharged to the Thames at Isleworth Ait; this deposits anoxic sediments to the local river reaches and has a detrimental impact on local river species. The river has no significant natural inputs of dissolved oxygen downstream of Teddington Lock and this makes it susceptible to oxygen sags in response to low flows, high temperatures and effluent inputs. There is relatively constant BOD loading from Mogden and other licensed discharges; in addition there are peaks caused by the periodic discharge of dilute but untreated effluent and associated solid detritus from combined sewer overflows.

The fishery is particularly vulnerable to the operation of combined sewer overflows following summer storms, when the conditions combine and major oxygen sags can result leading to high fish kills. It is likely however that the cumulative effect of the 50 to 60 combined sewer discharges on an average year has a larger underlying impact on ecology and habitat.



4.8 Litter

Plastic bags and plastic sheeting are common in the tidal Thames and often get lodged in trees where they look unsightly. Willow trees perform a useful 'raking' operation, preventing the passage of plastic to the sea and estuary. It is in the sea where research has shown they can be lethal to marine animals. Underwater, they 'open-up' and are mistaken as jellyfish and other prey items by marine turtles, for example. Leatherback turtles (*Dermochelys coriacea*) are recorded in the Thames Estuary.

There are on-going schemes to reduce litter in waterways both nationally and internationally. Within the Thames these schemes include "One-Less" to reduce plastic water bottle usage, PLA's Cleaner Thames Campaign, and local volunteer foreshore clean-ups. Litters picks have identified grot spots for maximum litter removal and specific kinds of litter that make it into the River, such as wet-wipes and sanitary products that have been flushed. Project opportunities exist to address some of these issues within the borough and will be followed up through the Richmond Biodiversity Partnership and HAP stakeholder meetings.

4.9 Water Quantity

Abstraction of fresh water for public water supply, combined with the effects of climate change, has resulted in extended periods, particularly in the summer, of low fresh water inflows to the tidal reaches of the river. This reduces the oxygen content in the river as well as promoting increased saline intrusion and potential changes to the habitat. The potential for the tidal Thames to be used for carbon capture through the installation of reedbeds and wetlands has yet to be explored.

4.10 River Transport and Recreation

The commercial traffic along the river is minor but there is significant recreational traffic by motorised and un-powered craft. Large washes resulting from certain motorised boats can have a significant impact on the river habitat and shoreline erosion. The combination of bank erosion by mitten crabs (see below) and large rolling washes, can be observed as accelerating the erosion. The river is vulnerable to dredging activities due to the high quality shellfish habitat and its sensitivity to dredging and associated sediment movements. Any organisation proposing to dredge within or local to the Borough should first seek clarification as to the likely impact upon these and other habitats. There has also been concern expressed regarding the potential impact of dredging down-stream, particularly if tidal conditions result in an influx of sediment rich water into this part of the river.

The river is well used by walkers and cyclists along the banks and whilst these uses are largely benign, there is a problem with refuse in the river and its impact upon larger animals, such as seals, turtles and dolphins, within the downstream reaches. There is some recreational fishing within the reach but no commercial fishery.

There is potential for increasing access to the river for recreation but this must be done in a controlled and sensitive manner and also address areas where access is causing damage to the banks and/or foreshore.

4.11 Problem Species

The Chinese mitten crab is recognised as a problem species in the tidal Thames, largely as a result of its habit of burrowing into marginal banks. Given the lack of suitable habitat in this borough it may be less of a problem at present but remains an issue if this habitat is re-introduced to LBRuT. Zebra mussel (*Dreissena polymorpha*) and quagga mussels (*Dreissena rostriformis bugensis*) are also potentially devastating to native ecological communities as well as having an economic cost through damage to infrastructure.



ZSL with TLS have been monitoring the freshwater bivalve communities at Twickenham and Petersham, during the draw-off, since 2007 with the first Thames quagga being found in these surveys in 2014.

Japanese knotweed (*Polygonum cuspidatum*) is a major problem species in the marginal habitat adjacent to the river. Himalayan balsam (*Impatiens glandulifera*) is also found extensively on river embankments and flood plain of the Borough and can result in mono-cultural habitat with little floral species diversity.

4.12 Lack of Knowledge

One of the main issues in the tidal Thames is the fragmentation of responsibilities for the river and no central repository for knowledge regarding the habitats and species present. There is considerable potential for improvements in river and river-side management for the benefit of habitat and species diversity. This fragmentation of responsibility and consequent lack of knowledge is a major hindrance to the development of improved management for the system. In an ideal world this Action plan will inform/show a way forward for other neighbouring Local Authorities. The PLA Vision for the Thames has a Biodiversity Group which has begun working on this and Thames Landscape Strategy as well as other members of the Richmond Biodiversity Partnership are members of this group. It is hoped that the PLA Vision will provide the guide for the tidal Thames as a whole in the long-term.

5. Current Action

5.1 Legal Status

The tidal Thames within London is not covered by any statutory nature conservation designation. It is however recognised by the GLA as a "Site of Metropolitan Importance for Nature Conservation". This non-statutory designation nonetheless is a valuable protection at GLA and local level in planning terms.

There is also a long term aspiration for the Tidal Thames to be covered within the Marine Conservation Zone, whist its candidacy/inclusion is on-going it is something to consider as a potential opportunity for the future.

There are a number of other sites adjacent to the river with Metropolitan status including Barn Elms Reservoirs, Bushy Park and Home Park, Ham Lands, and Stain Hill and Sunnyside Reservoirs. Further sites designated as having Borough Importance include the Old Deer Park, Royal Botanical Gardens, Lonsdale Road Reservoir, Petersham Meadows and Petersham Lodge Wood.

Opportunities for increased protection could be found with the improvement of such sites, for example Kew HaHa for connectivity with the Syon SSSI on the opposite bank and its potential as a unique habitat for terrestrial/aquatic invertebrates, bi-vales and molluscs.

5.2 Mechanisms Targeting the Habitat

Although, or maybe because, there is no overall authority for the tidal Thames, there are many initiatives at both a local and a regional level which either directly or indirectly impact upon the habitat. There is an active volunteer community with multiple organisations willing to take part in project work and surveying. There is need for overall co-ordination of these groups to make the most of delivery. Currently co-ordination is aided by groups including the South West London Environment Network and Thames Landscape Strategy in consort with LBRuT.

5.2.1 Your Tidal Thames

EA lead Catchment partnership for Teddington to the sea.



5.2.2 Thames Landscape Strategy Hampton to Kew

The "Thames Landscape Strategy" was established in 1994 for the Thames corridor between Hampton and Kew and the Borough is one of the key partners. The Strategy is ongoing, working with local groups and communities to develop management and regeneration schemes for the Thames landscape and supports funding activities for these plans. 'London's Arcadia' is one of the main schemes and has recently received £3.3m of Heritage Lottery funding for the riverside area between Twickenham and Richmond Lock.

5.2.3 Thames Strategy Kew to Chelsea

The "Thames Strategy Kew to Chelsea" was launched in June 2002 and sets out a vision for the management of the river and its corridor downstream of Kew Bridge to Chelsea. A full time project manager is in place to realise the objectives of this strategy.

5.2.4 Restoration of the Natural Floodplain

The Restoration of the Natural Floodplain project was launched by the Thames Landscape Strategy in 2008 to propose ways to naturalise the floodplain for the benefit of people, wildlife and water. There is the potential to develop managed floodplain habitats as part of the scheme although it will also result in the loss of some woodland habitat. Kew towpath, including Old Deer Park, Kew Haha, Royal Mid Surrey Golf Course, RBG Kew, Ham and Petersham, and Marble Hill Park also have potential for largescale floodplain habitats including vertical foreshore, fen beds, wet woodlands (willow carr/ black poplar), and saltmarsh/meadows.

5.2.5 Thames Tideway Strategic Study

The Thames Tideway Strategic Study is a collaborative study, managed by Thames Water, investigating options for improving the current problem of discharges from combined sewer overflows. This scheme is not scheduled for completion until 2020 and does not directly address the local problems resulting from Mogden and other local CSOs, which are all upstream of the proposed tunnel. Thames Water has proposed measures to reduce problems and also intends to implement local solutions for Mogden. The details of these schemes have not been viewed to date. The impact of material entering the Thames is of concern to all parties but consideration should also be given to the impact of any potential abstraction of water from the Thames and how it could affect salinity levels and species. Impacts of Thames Water activities upstream of the tideway should also be considered. Not just the direct impact to the water (e.g water quality, salinity levels and flooding) and but also the opportunities for wildlife; for example bird overwinter places in the reservoirs and converted gravel pits surrounding the borough and Thames.

5.2.6 Port of London Authority; Thames Vision

The Thames Vision (http://www.pla.co.uk/About-Us/The-Thames-Vision) is a 20 year framework for the development of the Thames. It was developed though stakeholders to set out a collective ambition for the River including trade, transport, leisure, environment, heritage and culture. The habitat of the tidal Thames is considered quite strongly in this Vision (along with anthropogenic activities) and the creation of a biodiversity group through the stakeholder engagement has created a mechanism for delivery.

5.2.7 Planning Controls

Planning developments are controlled by the borough UDP, to be superseded by the Local Development Framework, and the London Plan. No net loss, net gain for biodiversity should be implemented along the banks of the Richmond's Thames estuary. There will be a list of appropriate projects within the Action plan that can funded by developments that will provide options developers



whilst also enhancing the area for wildlife. Ultimately the planning process should seek not to be prohibitive to development if appropriate mitigation can be sort against negative impacts.

5.2.8 Towpath Group

This group has produced a detailed audit of the south bank of the river between Kew Bridge and Beverley Brook. A schedule of physical improvements and proposals for improved management for the benefit of biodiversity and river-side users are due to follow from this audit.

5.2.9 Zoological Society of London

The Zoological Society of London (ZSL) conducts annual invasive species surveys in November in Richmond, collect marine mammal sightings from members of the public throughout the entire tidal Thames and are planning an ambitious project to work with local community groups to monitor and map key fish nursery sites within the tributaries and creeks of the tidal Thames.

6. Flagship Species

These special plants and animals are characteristic of the tidal Thames in LBRuT; many are also listed in the London Plan or the UK Plan (this list is not exhaustive of the potential for the borough).

Common tern	Sterna hirundo	Summer visitor, breeds on derelict structures and islands.				
Grey heron	Ardea cinerea	Particularly associated with the islands, Inundations and backwaters.				
Purple loosestrife	Lythrum salicaria	A wetland plant characteristic of river banks particularly important for bumblebees.				
Two-lipped door snail	Lacinaria biplicata	A spire shelled mollusc. Its habitat is soil surface (usually with ivy cover) of occasionally flooded riparian land in the shade of closed canopy woodland.				
German hairy snail	Perforatella rubiginosa	A small mollusc with small bristles. Confined to the tidal Thames in the UK, it inhabits strandline detritus in the shade of closed canopy woodland and riparian vegetation.				
Flounder	Platichthys flesus	A sea fish which spends its juvenile months in the tidal Thames, which provides a refuge area for fry spawned in the North Sea.				
European eel	Anguilla anguilla	This iconic London Species is resident and migratory in the upper Tidal Thames. It is monitored in several off-Thames locations and indirectly during the draw-off mussel surveys. It is generally recognised that the eel population is decreasing in the main Thames but the off-stream populations and introduction of eel passes to in-stream obstacles is encouraging. The population is in need of further study in the Richmond borough.				
Great crested grebe	Podiceps cristatus	A crested diving bird feeding on fish. Once almost extinct in UK, several pairs are breeding in LBRuT, dependent on manmade rafts.				
Depressed river mussel	Pseudanodont a complanata	A jade green bivalve freshwater riverbed mussel found in the upper reaches of the tidal Thames. A UK BAP Priority species.				
Daubenton bat	Myotis daubentonii	Medium sized bronzy coloured furry bat. Often called the 'water bat' as it feeds on insects over smooth water.				
Nathusius's pipistrelle	Pipistrellus nathusii	Nathusius' pipistrelle is a rare bat in the UK, though records have increased in recent years. Four long distant migratory records				



		have been found: one bat ringed in Britain was rediscovered in Holland, a bat from Latvia was recaptured in Sussex and two bats from Lithuania were recaptured in Kent. This species of Bat uses the River Thames as part of its migration into Southern England.
Salmon	Salmo salar	Salmon were re-introduced in the 1980's and up to 500 fish were monitored passing through on their way from the sea to upstream spawning areas (2010-15). The monitoring is no longer carried out but there could be an aspiration for salmon in the future.
Black poplar		A rare native wetland specialist tree that unfortunately easily hybridises with none native species of poplar.
Loddon lilly/Large summer snowflake		This species is now only found in the Thames tributaries such as the River Loddon but there are records of this plant being found near the Isle of Dogs on the banks of the Thames there.
European sturgeon		The sturgeon has been historically recorded in the Thames – with a healthy population noted in medieval times. There has been some discussion about the re-introduction of the sturgeon into the Thames and would be supported by this plan should this project develop further.

7. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if	Ongoing	LA	Working groups



within their range, as well as maintaining species already found to be present.			
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups

Specific actions	for the Tida	I Thames	
Action	Target Date	Lead	Other Partners
TT01 – Three new artificial sand martin	2019 and	TLS	LA, SWLEN
nesting structures within the borough within	then on		
the next 10 years. This can include nesting	going		
sites being put at wetland sites like lakes as well.			
TT02 – Install 30 swift nesting structures	2019	TLS	
per year to be placed on bankside	then on		
developments.	going		
TT03 – Hydro-geographically map the river	2020	PLA	EA
bed; identifying opportunities for diversifying			
and enhancing fish and aquatic			
determine any areas of pollutant or			
sediment contamination.			
TT04 – Study what role the tidal sections of	2020	TLS	University, EA,
the Crane and other tributaries play in the			Thames Water,
ecology of fish in the Tidal Thames.			FORCE
TT05 – Identify locations where fish passes	2019	EA	ZSL, PLA
are feasible. Install fish passes.	ongoing		
TT06 – Setup salinity monitoring at, at least	Year 1	EA	
3 set/fixed locations (to be determined)	then		
within the boroughs.	ongoing		
Using a refractometer and at least 2 set			
depths. At least once a month in year one,			



than to be determined			
If already done by EA, obtain data.			
TT07 – Planting of black poplar and Loddon	Year 2	LA	TLS. SWLEN.
lily where appropriate willow and reed.	onward		TSKC, TCV
TTP08 – Nesting areas for waterfowl on	Year 3	LA	
eyots & aits in the Thames in line with the		Landowner	
Islands Management Plan.			
TT09 – Update the Thames Landscape	Year 1-2	TLS	LA
Strategy Islands Management Plan			
TT10 – London Wetland Centre possible	Year 3	WWT	LA , EA
Inundation points – sheltered lagoon and	onwards		
then connect through to the wader scrape			
or Main lake if the land heights work in a			
way that doesn't affect public safety.			
TT11 – Increase communications with	Year 1	TLS	
private land owners along the Thames e.g.		SWLEN	
Royal Mid-Surrey Golf Club and Kew			
Gardens.			
TT12 – Following from I I P11 we should	Year 2	RBG Kew,	
look at locations within these land holdings		LA	
that can be enhanced for wildlife, such as			
the car park within Kew gardens that has			
been long identified as a possible			
nundation point replicating the habitats			
Hounslow borough			
TT13 – Manning of invasive plant species to	Ongoing	ΙΔ	
determine spread and gauge impact on	Chigoing		OWLEIN
natives			
TT14 – Ensure communication with	Ongoing	TIS	
surrounding boroughs to have continuity.	ongoing	120	
TT15 – Increasing connectivity of the	Ongoing	LA	
tideway to other surrounding habitats	engeing	2, 1	
through anthropogenic/development usage			
of existing and potential corridors			
(opportunities for new connections from			
development).			
TT16 – Increasing the connectivity between	Ongoing	Landowner	
habitats and species who use the Thames		S	
as part of their life cycle			
(birds/bats/eels/fish).			
TT17 – Re-introduce the Lodden lily to the	2020	LA	
Borough find a suitable location (with the			
view of increasing the protection available			
to the chosen site).	0046		
III8 – Education leaflet/engagement	2019	Richmond	ILS
materials - Link to the gardens HAP with		Biodiversity	
regards to riverside properties – what you		Partnership	
can do to improve your garden and what			
you should avoid doing if your property			
Doruers the fiver bank.	1	1	



TT19 – Seek sustainable drainage opportunities through engagement and development/planning process.	Ongoing	LA, Thames Water	
TT20 – Engagement to affect cultural change regarding <i>Unflushables</i> , <i>Only Rain In Rivers</i> , and <i>Connect Right</i> .	Ongoing	Thames Water	TLS, SWLEN
TT21 – Find two suitable locations to install 10 artificial vertical foreshore m2 panels as a pilot study.	2019	TLS	PLA, LA
TT22 – Following the outcome of the pilot TT21, a new target to install 250m of artificial panel installation over 10 years.	2020- 2030	TLS	PLA, LA
TT23 – Investigate improvements to the Thames Young Mariners' lagoon and its connections to the wider habitats of Ham Lands.	Scope 2019 Ongoing if scoping successf ul	TLS	Surrey County Council, LA
TT24 – Investigate eel-pass at Teddington Lock (TLS ref 6.10P).	2019	EA	TLS, LA, ZSL
TT25 – Re-instate and promote the intrinsic connections between Kew Gardens and the	2019- 2021	TLS	LA, RBG Kew, Crown Estate, PLA
River Thames. (TLS ref 11.8P).			
River Thames. (TLS ref 11.8P). TT26 – Scope a project and begin survey programme to extend the wetland vegetation on the northern edge of the Old Deer Park recreation ground. Soften the boundary of the wetland with adjacent close mown grass areas. (TLS ref 10.11P).	2019 Scope	TLS	LA, Crown Estate, PLA
 River Thames. (TLS ref 11.8P). TT26 – Scope a project and begin survey programme to extend the wetland vegetation on the northern edge of the Old Deer Park recreation ground. Soften the boundary of the wetland with adjacent close mown grass areas. (TLS ref 10.11P). TT27 – Ham and Petersham Backwaters Project Develop project. Investigate funding opportunities for survey work. 	2019 Scope 2019 Scope	TLS	LA, Crown Estate, PLA LA, EA

8. Relevant Action Plans

8.1. Local Plans

Reedbeds, Bats, Grassland, Black Poplar, Ancient and Veteran Trees, Rivers and Streams, Water Vole.

8.2. National Plans

Mudflats, Sub-littoral Sands and Gravel, Twaite Shad, Salmon, Depressed River Mussel.



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10. Abbreviations

BAP: Biodiversity Action Plan BCT: Bat Conservation Trust BOP: Biochemical Oxygen Demand DEFRA: Department for Environment, Food and Rural Affairs EA: Environment Agency FC: Forestry Commission FoBC: Friends of Barnes Common GA: Generic actions	LWT: London Wildlife Trust NE: Natural England PLA: Port of London Authority RBG: Royal Botanic Gardens RBP: Richmond Biodiversity Partnership SSSI: Site of Special Scientific Interest SWLEN: South West London Environment Network TLS: Thames Landscape Strategy
GIGL: Greenspace Information for Greater	TRP: The Royal Parks
GLA: Greater London Authority	TT HAP Working Group: Tidal Thames Habitat
HAP: Habitat Action Plan	Action Plan Working Group
LA: Local Authority (LBRul)	UDP: Unitary Development Plan
LNHS: London Natural History Society	Police)
LTWGS: London Tree and Woodland Grant	WWT: Wildfowl and Wetlands Trust
Scheme	ZSL: Zoological Society of London

11. Contact

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Richmond upon Thames

Species Action Plan

Bats



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1. Aims

- To reverse the current population declines of bats in London Borough of Richmond upon Thames (LBRuT)
- To address public misconceptions about bats and secure their status as culturally valued species.

2. Introduction

Bats are highly adapted nocturnal mammals – the only mammals to have evolved powered flight. Often thought of as flying mice, they are in fact more closely related to humans than to rodents, and form a special group of their own: the *Chiroptera*, meaning 'hand-wing'. Bats are generally only seen briefly at dusk and their seemingly furtive nocturnal habits have, over generations, resulted in popular misconceptions and even a misplaced fear of them. Modern horror stories, films and the media quoting fiction as fact have not helped to improve this tainted public image.

British bats only eat insects. Serving as natural insecticides, they consume huge numbers and variety of prey – a single pipistrelle can eat 3000 midges in a night. With the loss of natural roost sites in trees and woodlands, many bats have adapted to living in buildings. Some favoured householders may therefore be surprised to discover these unexpected lodgers for a short period during the summer, when female bats need somewhere warm to raise their young. Their reliance on buildings for roosting greatly focuses conservation efforts on people's tolerance and goodwill. Bats are an excellent indicator of the quality of our environment, as their complex ecological requirements leave them highly sensitive to environmental changes. Their serious decline should be of major concern to us all.

All of LBRuT's bat species are dealt with collectively in this plan because:

- Those currently concerned with the conservation of bats deal with all species;
- All bat species and their roosts are equally protected by law;



• The conservation problems faced by all bats are believed to be generally similar, so measures proposed here are likely to be of benefit to a number of species.

3. Current Status

Eleven bat species are known to occur in LBRuT and at least six are thought to breed. Common and soprano pipistrelle are by far the most widespread, while the noctule, brown long-eared bat and Daubenton's bat are more localised but regularly recorded. Two nationally rare species, Nathusius' pipistrelle and Leisler's bat, are regularly recorded in the borough. Serotine and Natterer's bat are occasionally recorded, the latter confirmed as a breeding species in 2009. Whiskered/Brandt's bat is also strongly suspected to occur in the borough. Important sites in LBRuT for bats include the London Wetland Centre in Barnes, the River Crane valley, Richmond and Bushy Parks, Stain Hill reservoirs, as well as various sites within the River Thames corridor, such as Petersham Lodge Woods and Lonsdale Road reservoir.

Worryingly, a survey undertaken in 1999 found that there had been a significant decline in Greater London's bat populations since the mid-1980s, particularly for the noctule and the serotine (Guest *et al.*, 2000). A study in 2007 again showed a significant decline for noctule between 1999 and 2006 (Briggs *et al.*, 2007). Some of the probable causes of this are summarised below.

Current bat species listed as priority species under the UK Post-2010 Biodiversity Framework are:

- Greater Last recorded in Greater London in 1953, historic status in LBRuT unknown
- Lesser horseshoe Last recorded in Greater London in 1953, historic status in LBRuT unknown
- Barbastelle Recorded in Greater London in 2017, the first record since 1968; last recorded in LBRuT in 1946
- Bechstein's bat Not recorded in Greater London, historic status in the region unknown
- Noctule
 Regularly recorded in LBRuT, though evidence of a decline in Greater
 London
- Soprano Regularly recorded in LBRuT, including known breeding roosts pipistrelle
- Brown long-eared In LBRuT mainly recorded in Royal Parks, including known breeding bat roosts

4. Specific Factors Affecting the Species

4.1 Loss of maternity roost sites in buildings or trees

Destruction of, disturbance or damage to vulnerable maternity roosts can result from entrenched attitudes towards maintenance and management, a lack of public awareness and understanding of bats, as well as continued ignorance of the legislation protecting them.



4.2 Loss of and disturbance to other roost sites

Hibernation and other seasonal roost sites can be disturbed or damaged for the same reasons as above. These sites include buildings (mainly their roof spaces), trees, bridges and various underground structures, such as cellars, and disused tunnels.

4.3 Loss of feeding habitats

Changes in land use (including development) can result in the loss of insect-rich feeding habitats such as wetlands, woodlands and grasslands.

4.4 Disturbance to commuting routes

Flight paths to and from feeding areas and roosts may be disturbed through the loss of flight line features such as green corridors, or through introduction of new features such as artificial lighting.

Bats require an urban gradient of less than 60% of built or lit surfaces in order to move freely. Vegetation removal must be mitigated by green infrastructure on new buildings including green roofs.

5. Current Action

5.1. Legal status

All species of bat are protected in the UK through their inclusion on Schedule 5 of the *Wildlife and Countryside Act*, 1981 (as amended by the *Countryside and Rights of Way Act*, 2000), and on Schedule 2 of the *Conservation of Habitats and Species Regulations 2010*. The latter further implements European legislation protecting bats. Bats are also protected from cruel ill-treatment by the Wild Mammals (Protection) Act, 1996.

The UK is a signatory to the *Agreement on the Conservation of Bats in Europe (EUROBATS)*, which came into force in 1994, set up through the *Bonn Convention on the Conservation of Migratory Species of Wild Animals*, 1979. While this is not strictly a legal instrument, as a signatory the UK is obliged to abide by such agreements.

5.2. Mechanisms targeting the species

5.2.1.Bat wardens

The London Bat Group trains volunteers to become licensed bat wardens in London, working in liaison with Natural England and the Bat Conservation Trust to safeguard bat roosts (particularly those in houses) that may be under threat. Participants are active within LBRuT.

5.2.2.Awareness-raising

The place of bats in London life is promoted regionally and locally by organisations such as the London Bat Group, London Wildlife Trust, the Wildfowl and Wetlands Trust at Barnes, The Royal Parks and Richmond Council through a programme of guided walks, illustrated talks, training and articles. The Bat Conservation Trust, Natural England and the London Bat Group have produced various publications, including a series of specifically targeted leaflets aimed at promoting best practice in relation to bats within the building, pest control and arboricultural professions.

5.2.3. Survey and Research

London Bat Group volunteers based within LBRuT participate in national and local surveys and research, including the Bat Conservation Trust's National Bat Monitoring Programme.



6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 - Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups



Specific actions for bats			
Action	Target Date	Lead	Other Partners
RB01 – Promote best tree work practice with links to appropriate websites information such as BCT's 'Bats In Trees' & other appropriate publications.	2019	LA	BCT, LTOA, LBG
RB02 – Run one day arborist/ecology course in Richmond Park for arborists and ecologists.	Annual	BCT	TRP
RB03 – Maximise the roosting opportunities for prospecting bats by encouraging land managers and property owners to follow good practice guidelines.	Ongoing	LA	LBG, TRP, TCV, TW, Network Rail
RB04 – Distribute appropriate information to major roofing contractors & pest control companies.	2019	LA	NE, LBG, BCT, Trade Associations
RB05 – Maintain annual borough participation in NBMP at least 10 sites.	Annual	BCT	LBG
RB06 – Identify potential sites for roost and hibernaculum creation opportunities.	2019	Working group	LBG, LA, RBP
RB07 – Create or promote new roost opportunities on 8 identified sites.	2023	Working group	LBG, LA, WWT, TCV, EA, TLS, TW, LWT, TRP, RYOT, Network Rail
RB08 – Run a training course in use of bat detectors and/or running bat walks.	Annual	WWT, LBG	BCT
RB09 – Enable volunteers to gain experience/training in trapping/tracking techniques within LBRuT as part of LBG project work.	2020	LBG	Working group
RB10 – Ensure Richmond and Bushy Park management plans include actions to protect known bat roosts and enhance habitat, particularly for brown long-eared and Natterer's bat.	2019	TRP	Working group
RB11 – Promote availability of SWLEN's bat detectors for public to borrow to encourage interest in bats and recording	2019	SWLEN	
RB12 – Repeat Warren Footpath monitoring surveys to enable final year of data to be collected for comparison with baseline data and write up final results	2020	Working group	LA, LBG
RB13 – Modern roofing membranes that are the cause of bat-entanglement should not be	Ongoing	LA	Working group



used in buildings that have had known bat presence or high potential. This includes buildings that are near woodland, water or of a certain age or historic in nature. See <u>http://www.batsandbrms.co.uk/</u> for latest info on research and best practice.			
RB14 – Request the reduction in night-time lighting through the following measures:	Ongoing	LA	Working group, Groups that carry out locking and manage car parks on Richmond Council's behalf.

- 1. Give support to any measure which seeks to limit night-time lighting by the imposition of curfews after 1am.
- There should be no NEW lighting near ecologically sensitive areas, ponds, lakes, rivers, and areas of high conservation value. New schemes elsewhere should provide refuges/dark corridors that animals can use.
 - General recommendation to:Limit the duration of light
 - Reduce 'light trespass' into areas not intended to be lit (including the sky)
 - Change the intensity of lighting
 - Change the spectral composition of the lighting.
- 3. Floodlighting schemes should be encouraged to:
 - Reduce the height of lighting columns
 - Not to use reflective surfaces under lights
 - Use narrow spectrum, avoid white and don't use UV light to minimise the range of species affected by light
 - Lights should not be on automated switching but should be extinguished after the last user.
- 4. Car park lights should be switched off as early as possible.
- 5. Trees and vegetation should be retained as they act as light shields.
- 6. Historic buildings should not be lit: this includes uplighters on churches and chapels as well as heritage structures.
- 7. Events with lighting or fireworks should not be held near water or during the period May to August.

7. Relevant Action Plans

7.1 Local Plans

Ancient and Veteran Trees; Broad-leaved Woodland; Lowland Acid Grassland; Reedbeds; Tidal Thames; Hedges; Private Gardens; Rivers and Streams.

7.2 London Plans

Woodland; The Tidal Thames; Private Gardens; Rivers & Streams; Reedbeds; Churchyards and Cemeteries; Parks, Amenity Grasslands and City Squares; Open Landscapes with Ancient/Old trees Audit.



7.3 National Plans

Built Environment and Gardens; Greater Horseshoe Bat, Lesser Horseshoe Bat, Barbastelle, Bechstein's Bat, Noctule, Soprano Pipistrelle, Brown Long-eared Bat.

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9. Abbreviations

BCT: Bat Conservation Trust DEFRA: Department for Environment, Food and Bural Affairs	LTOA: London Tree Officers Association LTWGS: London Tree and Woodland Grant
FA: Environment Agency	I WT: London Wildlife Trust
FC: Forestry Commission	NF: Natural England
FoBC: Friends of Barnes Common	RBP: Richmond Biodiversity Partnership
GA: Generic actions	RYOT: Richmond Youth Offending Team
GIGL: Greenspace Information for Greater	SWLEN: South West London Environment
London	Network
GLA: Greater London Authority	TLS: Thames Landscape Strategy
LA: Local Authority (LBRuT)	TRP: The Royal Parks
LBG: London Bat Group	TW: Thames Water
LNHS: London Natural History Society	WLO: Wildlife Liaison Officer (Metropolitan
LBRuT: London Borough of Richmond upon	Police)
Thames	WWT: Wildfowl and Wetlands Trust

10. Contact

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The Local Biodiversity Action Plan for Richmond

Richmond upon Thames

Species Action Plan

Native Black Poplar



Specimen of native black poplar collected from Richmond Park in 1929 © Royal Botanic Gardens Kew

1. Aims

- To contribute to the conservation of native black poplar in the UK through protection, maintenance and promotion of the population in the London Borough of Richmond upon Thames (LBRuT).
- To undertake research in order to further understand the genetic diversity of the native Black Poplar population within LBRuT.
- To raise awareness and increase knowledge of the native black poplar.

2. Introduction

The native black poplar (*Populus nigra* ssp. betulifolia) was formerly a component of floodplain woodland but now occurs as isolated specimens in wet meadows, along hedgerows, beside ponds, near to rivers and in amenity plantings. It has not reproduced naturally for many centuries and its current distribution reflects the once common practice of striking cuttings for use mainly around farms. It has been in decline for the last 200 years and is now one of the rarest trees in the UK. There are so few native black poplars left that it is unlikely that they will pollinate each other, instead the large numbers of introduced cultivated trees will pollinate them. Consequently, due to this and to the loss of the specific habitat conditions required for germination, there are rarely any new truly native black poplars. Our surviving trees are an even aged population: most have reached old age and mortality rates are high for a variety of reasons.



3. Current Status

3.1. Current Status - National

There are an estimated 7000 native black poplars in Britain, chiefly occurring south of a line from the Mersey to the Wash. Many of these are believed to be genetic clones so probably considerably less distinct genotypes exist. The tree has strongholds in Cheshire, the Vale of Aylesbury, East Anglia and Greater London. The genus is dioecious (either male or female) and female trees are particularly rare, with an estimated 600 nationally (Forestry Commission, 2004). Britain's intensively managed rivers have lacked suitable habitats for centuries and consequently, the current population reflects former planting preferences rather than any natural distribution pattern.

Planting has been restricted to vegetative cuttings, and this is the main reason why genetic diversity is low. In addition, there was very little planting of new trees until the late 1990s. Hybrid crosses of the European black poplar (*Populus nigra ssp. typica*) and the American cottonwood (*Populus deltoides*) have been extensively planted in place of the native tree over the last 200 years. There has been much misidentification of hybrids as natives and *vice versa*. A large number of street trees in Manchester have recently succumbed to a disease called poplar scab (*Venturia populina*); it is not clear at present whether the disease will affect other parts of the country, especially eastern areas where the drier climate and wider spacing between trees could limit its ability to spread.

3.2. Current Status – Local

The number of native black poplars in LBRuT is the highest of all London boroughs, with 10 female and 11 male of unique clones identified (Jamie Simpson, personal communication). The Royal Botanic Gardens at Kew has a selection of trees grown from cuttings taken from across the country and Richmond Park has veteran females as well as new plantings. The population on the Thames at Barnes is the most important due to its many veteran females of unique clones which because of their location and spacing, are likely to be the relic of a natural population. There are a number of veteran and mature trees scattered across other areas of LBRuT. In c. 2001 an ongoing propagation programme was initiated by the Royal Parks using cuttings taken from within Richmond Park. These trees have been planted within the park and distributed via local organisations for planting along the Thames and in Local Authority parks. There are concerns that cuttings are sourced from too small a selection of parent trees (of common genetic material). At present not enough planting is being undertaken to maintain the population and genetic diversity within LBRuT.

4. Specific factors affecting the species

4.1 Habitat Loss and Degradation

Loss of both natural river systems and unstable floodplain sediments results in an absence of suitable habitat for natural regeneration. The widely dispersed population makes site-based conservation more difficult. An additional problem is the removal of fallen trees that would otherwise survive in situ or regenerate from the stump.

4.2 Premature Death

This may result from the introduction of pests and diseases due to human or climatic factors, removal due to risk management concerns or poisoning of stumps preventing natural regeneration

4.3 Reproductive Problems and Degradation of Gene Pool

Widely available and commercially preferable hybrids have been planted in preference to native stock for the last 150 years. This, combined with the lack of native male trees in close proximity to native females, means that many new trees are hybrids rather than true native black poplars. The



majority of the natural population are at the end of their lifespans with few mature or semi mature trees for continuity.

4.4 Public Ignorance

Lack of identification skills and general ignorance of the importance of individual specimens.

5. Current action

5.1. Legal Status

Section 13 of the Wildlife and Countryside Act 1981, as amended, prohibits the unauthorised uprooting of any wild plant species. Native black poplars are not on Schedule 8 of the Act (those protected from any picking, uprooting or destruction) and only benefit from the general protection mentioned above. Some trees may be protected using Tree Preservation Orders under the Town and Country Planning (Trees) Regulations 1999. These are normally only served where it is known that a tree is under threat from felling. Some trees may lie within Conservation Areas associated with villages and flood meadows and would be afforded some protection. A Felling licence (Forestry Act 1967) may be required if a landowner wishes to fell a number of trees. Where a native Black Poplar grows within a hedgerow, the Hedgerows Regulations Act 1997 would afford some protection to the tree and hedge.

5.2. Mechanisms targeting the species

5.2.1 Propagation of trees

RBG Wakehurst Place has undertaken hand pollination at Richmond Park resulting in 26 trees being grown and identified by genetic testing as native black poplars. These will be given back to Richmond Park. Royal Parks propagation programme has been distributing trees. The RBG Kew has also undertaken propagation of all of the Barnes population unique clones and planted them within the gardens or the towpath

5.2.2 Collection and dissemination of information

Conservation information will be disseminated to owners of trees on an ad hoc basis by Jamie Simpson (clones and trees planted within gardens or on the towpath).

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)				
Action	Target Date	Lead	Other Partners	
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS	
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA	



GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups

Specific actions for black poplar				
Action	Target Date	Lead	Other Partners	
BPT01 – Resurvey and map the population of native black poplars in LBRuT to update new trees and gender identification.	2019	JS/LA	TRP, SWLEN	
BPT02 – Complete the identification of native black poplar clones (esp. the older specimens) in LBRuT.	2019	JS/LA	TRP, SWLEN	
BPT03 – Implement a propagation programme for unique clones of native black poplars from within LBRuT.	2019- 2022	JS/LA	FOBC, HRP, SWLEN	



BPT04 – Implement a replanting programme for new native black poplars.	2020- 2022	LA	JS/TCV, SWLEN
BPT05 – Continue to manage existing black poplar propagation stock in LBRuT.	Annual	FoBC/TRP/ JS	LA, SWLEN
BPT06 – Incorporate all LBRuT black poplar data on to LA tree management software system.	2019	LA	JS
BPT07 – The use of Tree Preservation Orders to protect existing veteran and mature trees and unique clones where deemed appropriate by the local authority.	2019	LA	JS, SWLEN
BPT08 – Produce an educational leaflet on native black poplars and their importance.	2019- 2022	JS/SWLEN	TRP, LA, HRP
BPT09 – Organise a celebratory event tied to another relevant habitat event.	2019- 2022	LA	TCV, TRP

7. Relevant Action Plans

7.1. Local Plans

Broadleaved Woodland HAP; Ancient and Veteran Trees HAP; Tidal Thames HAP.

7.2. London Plans

Black Poplar SAP; Tidal Thames HAP; Grazing Marsh and Floodplain Grassland.

7.3. National Plans

Wet woodland; Rivers & Streams.

8. References

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9. Abbreviations

- BCT: Bat Conservation Trust DEFRA: Department for Environment, Food and Rural Affairs FC: Forestry Commission FoBC: Friends of Barnes Common GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority HRP: Historical Royal Palaces JS: Jamie Simpson LA: Local Authority (LBRuT) LBG: London Bat Group LNHS: London Natural History Society
- LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust NE: Natural England RBG: Royal Botanic Gardens RBP: Richmond Biodiversity Partnership SWLEN: South West London Environment Network TCV: The Conservation Volunteers TLS: Thames Landscape Strategy TRP: The Royal Parks WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

10. Contact

The Lead for this Species Action Plan is SWLEN. Address: SWLEN, ETNA Community Centre, 13 Rosslyn Road, Twickenham TW1 2AR Tel: 020 8892 0590

Email: hello@swlen.org.uk



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Richmond upon Thames

Species Action Plan

Hedgehogs



1. Aims

- To prevent population decline of hedgehogs in the London Borough of Richmond upon Thames (LBRuT).
- To raise public and organisational awareness and concern about this culturally valued species.

2. Introduction

The hedgehog (*Erinaceus europeaus*) is an icon of national wildlife in the UK and is a UK Biodiversity Action Plan (BAP) priority terrestrial mammal species. A review of hedgehog population data suggests that we have lost at least fifty percent of rural hedgehogs and up to a third of urban hedgehogs since the year 2000. The loss is far greater in rural than in suburban areas: suburbs represent an opportunity to protect this treasured mammal (PTES & BHPS, 2018). As individual residents and visitors we can slow down or even reverse the decline by simple actions that cost little. Organisations should work together to conserve habitats and raise public awareness. Companies and local government also have a role in protecting green space and enhancing biodiversity. Through concern for hedgehogs and their habitat, we will help to maintain the balance of nature for wildlife more generally in LBRuT, which is a suburban environment with large green spaces.

Hedgehogs, our only spiny mammal, tend to live on the edges of woodland, in hedgerows and private gardens. They are active mainly at night, roaming over distances of around two kilometres. During the breeding season males can travel up to three kilometres in search of a female. Their young, known as hoglets, are born between May and September in litters of up to five. Over half of hedgehogs will die before their first birthday and only four in a thousand live as long as seven years. Hedgehogs hibernate between November and March, although most animals will move nest (hibernaculum) at least once over winter.



3. Current status

Hedgehogs rely on inter-connected green spaces with a sufficient range of habitats for nesting and foraging, with a minimum of 90 hectares of land. The total area of LBRuT is 22.6 square miles, 51% of this being occupied by parks, golf courses and other open green land. Domestic gardens dominate the remainder, taking up another 19% in 2005 (Private Gardens Habitat Action Plan, 2019). Richmond is a relatively green borough. However, the pressures on hedgehog habitats are similar to towns and suburbs everywhere. In London between 1998-9 and 2006-8 vegetated land in private gardens declined by the equivalent of two and a half Hyde Parks each year (LWT, London Garden City, 2010).

Estimating the population of hedgehogs is very difficult, as it is for many wildlife species. Central London has almost no hedgehogs, but some suburban neighbourhoods have more animals per hectare than anywhere else. It seems likely that LBRuT's hedgehog population is greater than in many other boroughs. This plan includes action to improve estimates of the distribution and if possible the size of local hedgehog populations.

4. Specific factors affecting the species

Many hazards can be controlled by simple responses and these are summarised in the Appendix below. For example, garden fences that have no gaps at ground level restrict the movement of hedgehogs. Hedgehogs are completely reliant on access to inter-connected patches of habitat where they can forage and find refuge (State of Nature, 2016). Loss of habitat to building development is a threat that requires a broader policy response.

Paving front gardens for parking reduces green space for all wildlife. Manicured gardens do not favour hedgehogs: they prefer long grass, compost heaps and wood piles for nesting and foraging. Busy roads that separate green spaces are a threat to life. Open ponds and swimming pools can be a hazard. Whilst hedgehogs are good swimmers, they can drown if there is nowhere for them to climb out. Slug pellets and pesticides can harm hedgehogs by entering the food chain and by reducing the number of invertebrates available as prey. Rodenticides can cause harm if a hedgehog feeds on an animal that has died from this cause.

Although badgers prey on hedgehogs, the two species have lived together in the wild for thousands of years. Badgers are not thought to be a main reason for hedgehog population decline (Wildlife Trusts, 2017).

5. Current action

5.1 Legal status

The hedgehog has partial protection under Schedule 6 of the Wildlife & Countryside Act 1981 (as amended). The hedgehog is included in the UK BAP Priority Species list, which is an important reference for species that are threatened and require conservation action. Hedgehogs are protected from cruel/ill treatment by the Wild Mammals (Protection) Act, 1996.

5.2 Mechanisms targeting the species

5.2.1 Public awareness

Raising public awareness is important so that people know how their actions may affect wildlife and why wildlife is important. See Appendix for key messages. Organisations in all sectors have a role to play in this. Examples include promoting take-up of wildlife surveys and encouraging people to record sightings. Increasing public concern for wildlife and biodiversity also encourages media interest, which can be harnessed to promote awareness. Horticultural organisations including allotments associations can promote good practice to members.



5.2.2 Education

Schools and colleges can enable children and young people to be future leaders in wildlife friendly gardening and nature conservation more generally. Voluntary and specialist organisations can support this through curriculum development and delivering educational sessions. Adult and community learning organisations can promote awareness for adults.

5.2.3 Built environment

Partnerships can help conserve a place for nature in a growing and changing city and suburbs. Key partners are environmental organisations, housing and transport developers, social housing providers and planners. An example is the partnership between PA Housing (formerly Paragon) and the People's Trust for Endangered Species (see https://ptes.org/hedgehog-street-inspires-community-garden/)

5.2.4 Open Green Spaces

As well as managing open green spaces for wildlife and biodiversity there is an opportunity to promote good practice and raise awareness through information for visitors. For example, the Royal Parks run a campaign to help hedgehogs (see

www.supporttheroyalparks.org/visit the parks/the regents park/hedgehogs/help).

6. Actions

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GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS	
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups	



GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
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GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions targeting hedgehogs				
Action	Target Date	Lead	Other Partners	
RBPH01 – Develop wildlife friendly gardening and education project and good practice advice for managers of greenspaces in all sectors.	Dec 2019	ET	RBP	
RBPH02 – Develop leaflet and web page with tips to improve habitat. Link to national and other local resources.	Dec 2019	ET	RBP	
RBPH03 – Produce and disseminate animation "Hedgehog Close" to raise awareness.	Dec 2019	ET		
RBPH04 – Set up on-line forum for members of public to engage with hedgehog sightings and information.	July 2019	ET		
RBPH05 – Develop communication tools, e.g. online briefings, for members of public interested in surveying and protection.	Oct 2019	ET	RBP	
RBPH06 – Develop and promote interactive sightings map for web page and report sightings to GiGL in appropriate format.	Oct 2019	ET	RBP, GiGL	



RBPH07 – Promote best practice in fencing design and installation with private sector.	Oct 2019	ET	RBP members
RBPH08 – Raise public awareness through fairs and other events.	from 2019	FOBC	RBP members
RBPH09 – Develop studies to improve estimates of size and / or distribution of populations.	Jun 2019	ET	PTES, Royal Parks, GiGL, LWT and Universities
RBPH10 – Install road signs warning of hazards to Hedgehogs from traffic where appropriate.	2019	LA	RBP
RBPH11 – Develop 'hedgehog highway' designation for areas to be identified.	2019	LA	RBP
RBPH12 – Encourage planning applications to enhance green connectivity and prevent or mitigate deterioration of habitat, e.g. links between gardens.	from 2019	LA	RBP

7. Relevant Action Plans

7.1 Local Plans

Private Gardens Habitat Action Plan.

7.2 London Plans

All London Green Grid. <u>https://www.london.gov.uk/WHAT-WE-DO/environment/parks-green-spaces-and-biodiversity/all-london-green-grid</u>

7.3 National Plans

National Conservation Strategy for Hedgehogs in the United Kingdom. <u>https://ptes.org/campaigns/hedgehogs/conservation_strategy_for_hedgehogs/</u>

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9. Abbreviations

- **BAP-**Biodiversity Action Plan **BCT: Bat Conservation Trust** BHPS: British Household Panel Survey DEFRA: Department for Environment, Food and Rural Affairs ET: Environment Trust FC: Forestry Commission FoBC: Friends of Barnes Common GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority LA: Local Authority (LBRuT) LBG: London Bat Group LNHS: London Natural History Society LTWGS: London Tree and Woodland Grant Scheme
- LWT: London Wildlife Trust NE: Natural England PTES: People's Trust for Endangered Species RBP: Richmond Biodiversity Partnership RSPB: Royal Society for the Protection of Birds SWLEN: South West London Environment Network TCV: The Conservation Volunteers TLS: Thames Landscape Strategy TRP: The Royal Parks WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

10. Contact

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Appendix: Public Awareness.

Raising awareness about needs and threats is one of the most important aspects of protecting hedgehogs. For further information, please consult www.hedgehogstreet.org. Key messages are summarised below.

Make hedgehog highways

Hedgehogs need to be able to roam for food and nesting. Get together with your neighbours, cut a hole in your fence or dig an underground tunnel between gardens about the width of an adult's hand. This helps other kinds of wildlife, too, including frogs, toads and newts that help to control the population of slugs.

Do not use slug pellets or pesticides

Hedgehogs need invertebrate prey such as slugs and beetles. The website www.wildaboutgardens.org.uk is useful for details of natural pest control methods such as nematodes for slugs. Slug pellets can also kill hedgehogs if ingested as the pellets are highly toxic, regardless of whether the pellets are organic or not organic. Hedgehogs can be harmed if they eat rodents that have died by poisoning.

Make water safe

Hedgehogs are good swimmers but need an escape route. Make a ramp from a plank covered in chicken wire or create shallow areas at the edge so they can scramble out.

Provide nesting sites

Fallen leaves make the perfect nesting material, so do not clear all these away in winter. Log and leaf piles and wilderness areas are good for nesting and hibernation as well as habitats for the hedgehogs' food.

Grow a wide variety of plants

Attract prey for hedgehogs by growing a wide variety of plants. If you grow plants that flower in the different seasons of the year this will help bees and other insects as well.

Know the hazards

Check for hedgehogs before lighting bonfires, strimming and mowing the lawn. Keep plant netting, tennis nets, litter and household rubbish above ground level so they do not get entangled. Promptly clear harmful litter such as cans and plastics. Let light into your garden for ten minutes before you put your dog out at night: Hedgehogs avoid light and will have time to get clear.

Feed appropriately

In cold or dry weather hedgehogs will benefit from a dish of shallow water and meat-based dog or cat food. Do not give them milk, which they will drink but cannot digest. Bread does not nourish them.

Make grey space greener

Paved areas are not hospitable for hedgehogs. Rubber car parking grids are an eco-friendly alternative driveway option as they allow for drainage and would provide a greener area for Hedgehogs to move along and feed. You can make 'grey' paved areas more wildlife-friendly by simple actions. Even planted containers will help sustain Hedgehogs' food supply. Hedgerows in


domestic gardens are beneficial - see RSPB reference below. See also the Royal Horticultural Society campaign "Greening Grey Britain".

Report sightings and problems

Make a report when you see a hedgehog, whether it is well or in apparent difficulty or even killed on a road. You can report and follow sightings on the map on the Environment Trust website <u>www.environmenttrust.co.uk/Hedgehogs</u>.



Richmond upon Thames Species Action Plan

House Sparrow



© lain Macqueen

1. Aims

- To reverse the current population decline of house sparrows in London Borough of Richmond upon Thames (LBRuT).
- To address public misconceptions about house sparrows and secure their status as valued species.

2. Introduction

House sparrows are one of the most common and widely dispersed bird species. They are native to most of Europe, the Mediterranean Basin and Asia and have been introduced to many other parts like the Americas, Africa and Australia. Their distribution is closely associated with that of human settlements living in urban areas as well as farmland.

However, the once common house sparrow (*Passer domesticus*) has declined in many cities across Europe since the late 1970s and is now listed as a species of conservation concern. According to a BTO study (2002) in garden habitats across Britain the species has declined by around 58% between 1970 and 2002.

House sparrows are very social birds that will breed, feed, roost and bath in groups. Colonies of about 20 to 40 individuals are common. They are also considered sedentary, though in the autumn large flocks may form to move 1 to 2 km away from their colonies to feed on sites where food is more abundant (BTO 2002).

Pairs will return to breeding colonies in the winter. House sparrows tend to nest in cavities like roof eaves, but may also nest in dense bushes. Up to four broods may be raised per breeding season with an average of 4 to 5 eggs per brood (BTO 2002).

Adult house sparrows feed mainly on seeds from grains and weeds but being very adaptable, they will eat other available foods like leftovers and crumbs. They are also frequently seen feeding from garden tables and feeders. The young are mainly fed on invertebrates like aphids and caterpillars; so an abundance of these is important for survival of the brood.



3. Current Status

3.1. Public perception of decline

Evidence that this once abundant bird has declined dramatically in recent years has been coming in from many sources. It is now a common experience to find that house sparrows have disappeared, or become far less prevalent, in many places where they were formerly abundant, and this now applies both in the centre of London and in many of the suburbs as well as some of the surrounding towns. The issue has attracted media attention and frequent inquiries from the general public. On 1st December 1997 a question was put in the House of Lords "Whether there has been a reduction in the numbers of sparrows in London; if so, to what is this reduction attributed?". On 15th May 2000 the Independent offered a £5,000 reward to anyone who could solve the mystery of the disappearing house sparrow.

3.2. Scientifically based studies

Summers-Smith (2003) reviewed available data for house sparrows in the UK and identified that the decline in urban areas started as early as the 1920s, with three distinct phases. This is evidenced by available data from London's Kensington Gardens, which found 2,603 birds in 1925, down to 885 in 1948, 544 in 1975 and only 8 in 2000. Initially, a steep decline in the 1920s has been attributed to the replacement of the horse with the internal combustion engine and the consequent loss of food to house sparrows. Then, a more gradual decline between 1945 and 1975 was followed by a rapid decline from the early 1990s to 2001. A number of factors that could explain this decline have been put forward and it is likely that a combination of these, and possibly other factors, have resulted in the latest decline:

- increased predation by domestic cats
- loss of nesting opportunities
- pollution from unleaded petrol contributing to a decline in aphids
- increased use of pesticides in parks and gardens.

Nevertheless, the decline in urban areas across the UK hasn't followed a clear pattern, with some cities such as London, Edinburgh and Dublin experiencing a decline as opposed to Manchester which did not (BTO study, 2002).

The BTO study (2002) also found that houses with gardens were strongly preferred to any other habitat type, which suggests that conservation measures targeting house sparrow breeding colonies in urban areas should focus on improving urban gardens.

Additional evidence is available from various national surveys.

In the BTO Garden Bird Feeding Survey, the house sparrow has fallen from being the fourth most common visitor to garden bird tables in the 1970s to ninth place in 2016 (recorded in 97% and 84% of gardens in the 1970s and 2016/17 respectively). The average number recorded in individual gardens in rural areas has fallen by about 50% between 1978 and 1993; in urban areas the data is less clear-cut, but there is a statistically significant decline from about 1986 onwards. These declines, however, are considerably smaller than those observed in Kensington Gardens, Wimbledon Park and suburban Glasgow.

The National Breeding Birds Survey shows a statistically significant decline of 7% between 1994 and 1998 (and 4% in 1997-8 alone). Within London, the decline has been more substantial, with a fall of about 50% between 1994-1999.



4. Specific factors affecting the species

As yet, it is not possible to identify one single factor as the cause of decline, although there are several theories. It is easy to see how some of the various factors outlined below could have significant impacts in particular localities, and it is of course possible that more than one factor is at work. Research is needed to try to identify which are the most important factors. Only then will it be possible to put in place any effective remedial measures.

4.1 Predation

The recent increase in domestic cat, sparrowhawk and magpie numbers has been put forward as a possible explanation. Nesting birds have been found in close proximity to predators, so these are not a limiting factor. Though predators are likely to have an impact on house sparrow populations in urban areas, they are unlikely to cause such a steep generalized decline. However, they can cause significant declines in local populations that are already under pressure (BTO 2011).

4.2 Disease

Declines on the scale now being seen in the house sparrow have been attributed to disease in some other species. A virus or *Salmonella* infection has been suggested. However, few if any diseased birds have been observed, although any corpses would most probably be quickly disposed of by carrion-feeders.

4.3 Food supply for the young

A lack of aphids to feed the young chicks has been proposed, though as pointed out in the BTO study (2002), nest record data in Britain shows an improvement in breeding performance in urban areas.

4.4 Pollution

Pollution in general might affect sparrows, particularly in urban areas. Additionally, the increased use of lead-free petrol has been presented as a possible explanation for a reduction in the abundance of aphids, which, if confirmed, could impact food supply for the chicks.

4.5 Changes in agricultural practice

Changes in agricultural practice may affect the London house sparrow population especially in late summer/autumn, when birds leave their nesting territories in residential areas and move off in seed-feeding flocks. No doubt some London birds disperse into the surrounding countryside. At this time, changes in agricultural practice, such as the switch to autumn sowing of cereals, and lack of stubble as autumn/winter feeding habitat may have some impact. Additionally, if surplus birds from nearby rural populations have traditionally augmented the London population from time to time, a fall in breeding success in rural populations could reduce the number of immigrants into London.

4.6 Reduction of seed harvest in autumn

In both central London and the suburbs, there has been a marked reduction in brownfield sites in recent years, as vacant land is recycled more quickly into new development than in the past.

4.7 Changes in roof design

This may be an issue in some areas of older housing stock which are undergoing renovation, as modern roof repairs may prevent access to the roof space for birds. However a decline has also been noted in areas where roof replacement is less widespread.

4.8 Pesticides used in roof treatment

In addition to re-structuring, roofs are often subject to pesticide treatment. Whilst it is recognised that certain pesticides are harmful to bats, no such issue has been recognised for birds.



5. Current Action

Both BTO and RSPB carry out annual garden bird surveys, which include data on house sparrows. These surveys are based on citizen's sightings, so comparisons can be difficult, but they certainly contribute to knowledge of species distribution and variations.

BTO also carried out a national survey on house sparrows in urbans areas between 2002 and 2004. The survey highlighted that houses with gardens were the most common type of habitat close to nesting sites. This could be explained because gardens provide both foraging and nesting conditions for sparrows (particularly suitable for a species with a small foraging range). Greenspace in the UK was the least preferred habitat, likely due to their rather open and homogeneous composition.

The exact status of the sparrows in LBRuT needs to be determined, although it is likely to occur and breed wherever there is suitable habitat, including gardens. Some attempt has been made to informally determine sparrow numbers at a number of specific sites in London and within the borough:

- SWLEN's Park House Gardens project
- RSPB and London Biodiversity Partnership surveys in 2002 and 2012 "Where have all the sparrows gone?"
- Friends of Richmond Park Breeding Birds survey 2016
- RSPB annual Big Garden Birdwatch

These surveys help to build a database on house sparrow numbers throughout the years and because they are mostly based on citizen science, they also promote awareness of house sparrow importance.

5.1 Legal status

Sparrows and their nests are fully protected under the EU Birds Directive and the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird. It is an offence to intentionally damage or destroy the eggs, young or next of a sparrow while it is being built or in use. It is therefore essential to ensure nests are not destroyed if hedge trimming or tree felling has to be carried out in the breeding season.

5.2 Mechanisms targeting the species

Awareness of house sparrows is promoted regionally and locally by organisations such as the RSPB, London Wildlife Trust and Friends of Richmond Park, through a programme of guided walks and articles.

As there are indications that this species is increasingly seeking refuge in gardens, useful on-going information about this species can be obtained from national surveys such as the BTO/RSPB Garden Bird watch.

These actions are ongoing. They need to be supported and continued in addition to the new actions listed under Section 6.



6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)				
Action	Target Date	Lead	Other Partners	
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, GLA	
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA	
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners & key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO	
GA04 – Contribute to database of species records in London (namely GiGL).	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS	
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups	
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP	
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media	
GA08 – Engage residents and schools in recording sightings by creating and promoting a page in social media for sightings of priority species in Richmond.	2019	SWLEN	Working Groups	
GA09 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. sparrow roosts), good/poor connectivity, etc.	2019	Working Groups	LA, TLS	



GA10 – Challenge inadequate reports presented for planning purposes. Request evidence base to support assertions.	Ongoing	LA	Working groups
GA11 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

House sparrow specific objectives:

1. To involve people in London and raise awareness of biodiversity issues pertaining to house sparrows.

2. To enhance house sparrows conservation status by contributing at local planning level.

Specific actions for house sparrow					
Action	Target Date	Lead	Other Partners		
STR01 – Contact relevant organisations to request data on sparrows in LBRuT.	2019	SWLEN	BTO, RSPB, LNHS, GIGL, RBP, SDBWS, WCC		
STR02 – Identify what techniques are being used to monitor sparrows across London.	2019	SWLEN			
STR03 – Collate existing data and identify areas of LBRuT where baseline data for this species are still needed.	2019	SWLEN			
STR04 – Establish appropriate survey techniques for conducting easily repeatable sparrow population monitoring.	2019	SWLEN			
STR05 – Co-ordinate community awareness actions to encourage species sightings (this is tied to GA04).	2019	Working group	SWLEN		
STR06 – Use sparrow monitoring data to identify areas of potential sparrow habitat where improvements could be made to boost local populations.	2019	Working group	SWLEN		
STR07 – Distribute sparrow nesting boxes in areas identified as having potential for new house sparrow habitat.	Ongoing	Working group	LA		
STR08 – Contribute to management plans for areas within LBRuT with existing or potential for sparrow populations.	Ongoing	Working group	LA		
STR09 – Work to include safeguards within the planning framework to ensure that survey and	Ongoing	Working group	SWLEN		



mitigation are included whenever sparrow populations might be affected.			
STR10 – Provide a local press release to highlight issues concerning sparrow conservation in LBRuT.	Annually	Working group	SWLEN
STR11 – Liaise with relevant land managers and provide information on habitat management techniques sympathetic to sparrows (e.g. types of trees and hedges popular with sparrows).	Ongoing	Working group	SWLEN

7. Relevant Action Plans

7.1 Local Plans

Broad-leaved Woodland HAP, Ancient and Veteran Trees HAP, Private Gardens HAP.

7.2 National Plans

England's 2020 Biodiversity Strategy: <u>https://www.gov.uk/government/publications/biodiversity-</u>2020-a-strategy-for-england-s-wildlife-and-ecosystem-services

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9. Abbreviations

BCT: Bat Conservation Trust	LTWGS: London Tree and Woodland Grant
BTO: British Trust for Ornithology	Scheme
DEFRA: Department for Environment, Food and	LWT: London Wildlife Trust
Rural Affairs	NE: Natural England
EC: European Community	RBP: Richmond Biodiversity Partnership
FC: Forestry Commission	RBGK: Royal Botanic Gardens Kew
FoBC: Friends of Barnes Common	RSPB: Royal Society for the Protection of Birds
FORCE: Friends of the River Crane Environment	SDBWS: Surbiton District Bird Watching Society
GA: Generic actions	SWLEN: South West London Environment
GIGL: Greenspace Information for Greater	Network
London	TLS: Thames Landscape Strategy
GLA: Greater London Authority	TRP: The Royal Parks
LA: Local Authority (LBRuT)	WCC: Wimbledon Common Conservators
LBG: London Bat Group	WLO: Wildlife Liaison Officer (Metropolitan
LNHS: London Natural History Society	Police)
	WWT: Wildfowl and Wetlands Trust

Working group: includes representatives from FOBC, FORCE, HLR, TRP, LA and WWT.

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10. Contact

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Richmond upon Thames Species Action Plan

Song Thrush



© Keith Martin

"From one-two decades ago it was possible to listen to half a dozen thrushes, now it is rare to hear more than one. The tendency... has been towards a greater artificiality, it saves for trouble and makes for prettiness to cut down decaying trees. To drape them in ivy and make them beautiful in decay would take some thought and care."

(W.H. Hudson on West London Song Thrushes, Birds in London, Dent & Sons, 1928)

1. Aims

- To prevent further decline of the song thrush in the London Borough of Richmond upon Thames (LBRuT).
- To contribute to an overall strengthening of the population of song thrush throughout London.

2. Introduction

The song thrush (*Turdus philomelos*) was once a common and widespread species throughout the United Kingdom. Both sexes are alike, with adult birds having warm brown back and upper parts and distinctive blackish-brown spots on the yellowish-white lower throat and breast. At around 20-23cm the song thrush is the second smallest of the six thrush species regularly occurring in the U.K. and the smallest of the three resident species. In the London Borough of Richmond upon Thames (LBRuT) it is only likely to be confused with the significantly larger mistle thrush and, in the winter, with the slimmer redwing.

The song thrush has a most distinctive loud and proclaiming song, which has endeared it to generations. This is heard throughout the day but most regularly before dawn and after sunset. The clearly uttered lively phrases and repetitions make the song thrush one of the most beautiful of our native songbirds. Breeding territories (typically around 0.2 - 2.6 hectares) are often established in late winter, making the song thrush one of the first birds to herald the approach of spring. In mid-January the suburban dawn chorus is often dominated by the calls of this species.

Song thrushes can potentially be found in any habitat where there is a mixture of woodland, bushes and hedgerows, a preference that often brings this species into parks, allotments and gardens. Song



thrushes nest low down in any suitable cover, but typically in shrubs, amongst creepers on walls or on the ground amongst thick vegetation. Song thrushes feed primarily on worms, slugs, snails and fruit.

The song thrush may be either a resident, a partial migrant or a passage migrant to the U.K. Some of our breeding birds are considered fairly sedentary, particularly those dwelling in gardens, but half the adult breeding population and two-thirds of first-year song thrushes are considered to be migratory, wintering in north-west France, northern Spain and Portugal to the Balearics. In addition, considerable numbers of nocturnal travelling song thrushes cross the North Sea each autumn to overwinter in the U.K from Scandinavia, Germany and Russia.

3. Current Status

3.1 National status

The once common song thrush is now a Red List species. Numbers have been in rapid, more or less continuous decline over the last 40 years. Long-term monitoring carried out by the British Trust for Ornithology shows that the population in England declined by more than 50 per cent between 1970 and 1995. This decline was most pronounced on farmland, where the population decreased by about 70 per cent. Because of this decline, the song thrush is listed as a bird of serious conservation concern (red). However, there has been a partial recovery in numbers during the last decade (RSPB, online).

In 1970 the Common Bird Census (CBC) estimate of the U.K. population was just over 3 million breeding pairs, which represented a significant recovery following a harsh winter in 1962-63 that had reduced the population to just over 2 million pairs. However, since 1970 the CBC estimate has steadily dropped to just over 1.1 million breeding pairs in 2000 (RSPB/WWT/BTO 2003). Since then, a slight recovery was observed; the BBS trend 1995 – 2015 shows a 22% increase (Hayhow et al. 2017). After a dip in numbers around 2007-2011 numbers are slowly rising again and have now reached levels observed in the mid-1980s.

Despite a slow recovery in populations, habitat specific trends show that in urban and suburban habitats song thrush populations have declined between 1995 and 2011 (Robinson et al. 2016).

3.2 Regional status

National trends of decline seem to have been reflected within the London area, and song thrush is a London BAP Priority Species. However, while there is some recovery on the national level, a significant decline of 34% has been observed in London between 1995 and 2013. The Breeding Bird Survey for London, conducted in 2014, shows a 20% increase from 2013-2014 and there has been an increase in territories at some of the sites; this increase for Song Thrush followed a statistically significant decrease between 2012 and 2013. (London Natural History Society 2016).

Below are breeding records from the Breeding Bird Survey for London (London Natural History Society, 2016, p. 131) for sites where five or more were recorded (no. of territories/singing males in brackets), plus all Inner London breeding records and some of the higher counts.

- **Essex:** Belhus Woods CP (10). Mar Dyke Valley (5). Orsett Fen (6). Rainham Marshes (6). Wanstead Flats, 50+ on Oct 14th.
- Hertfordshire: Beech Farm GP (5). Hatfield Aerodrome (6). Northaw Great Wood (7). Rye Meads (15).
- **Middlesex:** Hampstead Heath, 50 on Oct 15th. Home Park (12). Horsenden Hill (17). Tottenham Marshes (18). Wormwood Scrubs (15).



- Kent: Longfield Gallops, 27 on Oct 16th. Sutcliffe Park, 28 on Dec 25th.
- **Surrey:** Arbrook Common (5). Epsom Common (10). Molesey Heath (9). Richmond Park, 120 on Oct 31st. West End Common (5). Wimbledon Common (c40).
- In London: Hyde Park/Kensington Gardens (3). Regent's Park, 18 singing on Jan 25th.

3.3 Local status

In 2015, a song thrush survey was circulated to specific groups and individuals to invite interested parties to send in any sightings in LBRuT green spaces, with an invitation to send in records up until 30th June 2015. This initiative was a way of re-animating communication and awareness of the song thrush in the Borough. Responses to the survey were very limited; personal comments from several resident birdwatchers indicated a lack of birds.

Table 1 Song thrush territories at Sites of Metropolitan, Borough and Local Importance for Nature Conservation in LBRuT:

Site	Territories (year in brackets)	Territories (year in brackets)	Territories (year in brackets)
Barnes Common	6 (2004)	9 (2010)	
Bushy and Home Parks*	9 (unknown)		
Crane Corridor	23 (2005)		
East Sheen & Richmond Cemeteries	4 (2005)		
East Sheen Common		4 (2011)	7 (2015)
Ham Common			
Ham Lands	26 (2005)	11 (2009)	
Kew Gardens			
London Wetland Centre	6 (2004)	5 (2010)	9 (2016)***
Old Deer Park			
Richmond Park**		41 (2008)	44 (2015)
Palewell Common			

* including the Royal Paddocks Allotments

** Richmond Park - distribution of territories in 2008: Enclosed - 22 (enclosed woods, lodges, gardens and small enclosures), Boundary - 14 (beside Park boundary wall, adjoining other green spaces and gardens), Unenclosed - 5 (unenclosed woods, including one in wood with extensive Rhododendron).

*** London Wetland Centre Breeding Bird Survey 2016

In addition to the territories mentioned above, the survey found that song thrushes were active along the River Thames corridor from April to June 2015 from Orleans House Grounds, to Marble Hill Park, to the grounds of Richmond Palace, along the river down to Kew Gardens, and in the St Margarets Lake and River Pleasure Gardens. Observations showed that song thrush territories are in wooded areas in green spaces and generally in the densest and least disturbed part of the habitat. They are found in Orleans House Grounds along the wall by the road on both sides of the Grounds. They are also found in Marble Hill Park in the two central fenced off woodland zones (inaccessible to the public) between the 'ice house' and the Main House, along the wooded area running up the left hand side of the public park on the north-west side of the park from the Main House to A305 running



parallel to Montpelier Row (as confirmed by Andrea Arthan, Marble Hill Park Ranger) There are further territories in the trees and shrubs along the Thames towpath between Richmond Bridge and Kew Gardens (Richmond / Kew side of the river).

A full survey of Richmond Park by the Richmond Park Bird Recording Group (RPBRG) in 2015 found 44 Song Thrush territories, a similar number to that found in the last full survey in 2008 (41), which suggested a stable population within the park. The distribution within the park has changed slightly due to management work in a few of the park's woodlands. The necessary removal of rhododendron from the park's largest wood over the last few winters has led to the loss of territories. However, these were offset by new territories in woods where the planting and development of understorey has taken place.

Surveying at the London Wetland Centre indicates stable populations at the site.

A survey of (East) Sheen Common by Jan Wilczur in 2015 found 7 territories, an increase from the 4 found in 2010. This may be within the natural variation of the population but shows that this relatively small woodland is important for song thrushes within LBRuT.

From Jan Wilczur's recent observations, song thrushes are not thriving in, or even occupying, gardens in LBRuT. They seem to be most successful in woods, parks and green spaces along the river that contain areas of dense shrubs and open areas. Such areas may appear 'untidy' but are in fact safe havens for song thrushes and other wildlife. (Bramble undergrowth is important for shelter, and prevents access to dogs, deer and humans.)

There are additional data available from Green Space Information for Greater London (GIGL). However, these were not included in this Species Action Plan, as these records do show a strong bias of recording effort; data possibly show where people have gone looking for song thrushes rather than the actual distribution of the bird across London (personal communication Maria Longley (GIGL), 29th January 2018).

4. Specific Factors Affecting the Species

Changes in survival in the first winter, and also the post-fledging period, are sufficient to have caused the population decline. The environmental causes of this are unknown but are likely to include changes in farming practices, particularly land drainage and possibly increased pesticide usage. (Robinson et al. 2016)

4.1 Habitat loss

During the breeding season song thrushes need nest sites low in dense vegetation. Overmanagement of suitable habitat, including reductions in shrub cover or removal of hedgerows, are likely to be detrimental to song thrush numbers by reducing the supply of suitable nest sites and exposing nests to predators. While habitat loss has been most significant in agricultural areas (note that there is a significant amount of farmland within West London, to the west of LBRuT) there is anecdotal evidence that a reduction in urban shrub cover may well be affecting song thrush populations throughout the London region. As our opening quote from D.H. Hudson in 1928 suggests, this issue is not a new one.



4.2 Food supply

Research indicates that a number of combined factors may be affecting the regular food supply of song thrushes, leading in turn to pressures on fledgling birds in particular; about half of all song thrush fledglings die within their first 45 days, and two-thirds within 70 days (Robinson et al. 2004). The number of broods may also be affected: song thrushes on intensive arable farmland make only 2-3 nesting attempts per year, compared to 4-5 attempts for birds in a stable population (RSPB, online):

- **Greater use of pesticides** in the countryside and in gardens has reduced available food. Note that the reduction in song thrush numbers in agricultural areas has resulted in gardens becoming an increasingly important habitat. Certain molluscicides such as slug pellets not only reduce the number of available slugs, but are also known to be toxic to song thrushes.
- **Periods of cold, snowy weather in winter and hot, dry weather in summer** lead to difficulties for song thrushes in locating sufficient earthworms and soil-dwelling invertebrates.
- Changes to habitat such as land drainage have reduced foraging habitat.
- **Cropping methods and rotations** have led to a decline in organic matter in the soil, which in turn leads to a reduction of song thrush food supply.

4.3 Other factors

Several other factors have been suggested for declining song thrush numbers, although it seems unlikely that these are as significant as habitat loss and food supply decline:

4.3.1 Increased predation by corvids, sparrowhawks, foxes and cats.

Research has however indicated that magpie and sparrowhawk numbers on 250 study farms across lowland Britain are not connected to a reduction in song thrush numbers. Further, the proportion of song thrush nests that are predated has actually fallen during the last 30 years (RSPB, online).

4.3.2 Hunting in Southern Europe.

This could potentially affect breeding age song thrushes who migrate to hunting areas in the winter but the precise effect is hard to quantify.

4.3.3 Increased competition from blackbirds.

This has been suggested as the blackbird is a more aggressive thrush species sharing the habitat and food supply of the song thrush (Simms 1998). However, BBS data shows similar trends for the blackbird population over the period 1994 to 2003 (slight national increase, significant London decrease) suggesting that this is unlikely to be a major population driver (RSPB, online).

5. Current Action

5.1 Legal status

Song thrushes and their nests are fully protected under the EU Birds Directive (EC/79/409) and the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird. It is an offence intentionally to damage or destroy the eggs, young or nest of a song thrush while it is being built or in use. It is therefore essential to ensure nests are not destroyed if hedge trimming or tree felling has to be carried out in the breeding season.

The song thrush is a priority U.K. BAP species. It is also a Red List species (high conservation concern) (Robinson et al., 2016).



5.2 Mechanisms targeting the species

These current actions are ongoing. They need to be supported and continued in addition to the new actions listed under Section 6.

Until CBC results indicated that the song thrush was in decline it was assumed that the national song thrush population was relatively stable. The high profile of the song thrush as a familiar and widespread species has resulted in considerable focus on numbers throughout the U.K. Examples of activities are listed below:

5.2.1 National research

The song thrush is currently abundant enough to be fairly accurately monitored across the U.K. using the Breeding Bird Survey.

As there are indications that this species is increasingly seeking refuge in gardens, useful ongoing information about this species can be obtained from national surveys such as the BTO/RSPB Garden Birdwatch.

5.2.2 Local census work

Local data on song thrush numbers can be extracted from all the main national surveys, and may indicate trends without providing comprehensive local information.

In LBRuT, a song thrush survey was circulated to specific groups and individuals in 2015. This invited interested parties to send in any sightings in LBRuT green spaces to RBP. In addition, informal monitoring of song thrush numbers has been undertaken at several specific sites. Information about song thrush numbers can also be extracted from a number of "standard walk" surveys being conducted in LBRuT (Richmond Park, Ham Lands, Barnes Common, Crane Valley).

5.2.3 Information dissemination

As well as pushing the plight of the song thrush in national media, the RSPB has produced an advisory sheet containing guidance for landowners which can be found online.

The Richmond Biodiversity Partnership produced a song thrush leaflet to inform residents about the bird in LBRuT and suggested reducing molluscicides and providing nesting habitat in private gardens.

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS



GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

On a sidia a stiene fay some threads					
Specific actions	Specific actions for song thrush				
Action	Target Date	Lead	Other Partners		
STR01 – Contact relevant organisations to request data on song thrush in Richmond Borough.	2020	Working group	BTO, RSPB, LNHS, GIGL, RBP, SDBWS, WCC		
STR02 – Recruit volunteers and provide any necessary training.	Ongoing	Working group	RBP, SWLEN		



STR03 – Co-ordinate an ongoing borough-wide song thrush survey.	2019 and bi- annually	Working group	RBP
STR04 – Use song thrush monitoring data to identify areas of potential song thrush habitat where improvements could be made to boost local populations.	2019	Working group	LA, RBP, TCV
STR05 – Liaise with relevant land managers and provide information on habitat management techniques sympathetic to song thrush. Encourage land owners to set aside an area under minimal maintenance as song thrush habitat.	Ongoing	Working group	LA, RBP
STR06 – Contribute to management plans for areas within LBRuT with existing or potential for song thrush populations.	Ongoing	Working group	LA, RBP
STR07 – Lobby for safeguards within the planning framework to ensure that survey and mitigation are included whenever song thrush populations might be affected.	Ongoing	LA	Working Group
STR08 – Protect song thrush habitat through the planning system and awareness raising.	Ongoing	Working group/LA	SWLEN, ET
STR09 – Provide a local press release to highlight issues concerning song thrush conservation in LBRuT.	Annually	Working group/LA	SWLEN
STR10 – Organise a series of song thrush walks in areas of local song thrush habitat.	2019 & Ongoing	Working group	RBP, SWLEN friends groups
STR11 – Provide local residents with digital leaflets on how to help song thrush.	2019	Working group	

7. Relevant Action Plans

7.1 Local Plans

Broad-leaved Woodland, Ancient and Veteran Trees, Hedgerows, Private Gardens.

7.2 London Plans

The London Plan, London Plans include Woodland, Heathland Habitat, Wasteland Habitat, Churchyards and Cemeteries, Private Garden, Parks, Squares & Amenity Grassland, Woodland Audit, Open Landscapes with Ancient/Old Trees Audit, Heathland Audit, Churchyards and Cemeteries Audit, Railway Linesides Audit, Farmland Audit, Private Gardens Audit, Parks, Amenity Grasslands and City Squares Audit, Urban Wastelands Audit and Hedgerows Audit.

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The London Wetland Centre Breeding Bird Survey 2016 map



9. Abbreviations

BAP: Biodiversity Action Plan BBS: Breeding Bird Survey **BCT: Bat Conservation Trust** BTO: British Trust for Ornithology **CBC: Common Bird Census CP: Country Park** DEFRA: Department for Environment, Food and Rural Affairs EC: European Community FC: Forestry Commission FoBC: Friends of Barnes Common FORCE: Friends of the River Crane Environment GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority LA: Local Authority (LBRuT) LBG: London Bat Group

LNHS: London Natural History Society

LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust **NE: Natural England RBP: Richmond Biodiversity Partnership RBGK: Royal Botanic Gardens Kew RPBRG: Richmond Park Bird Recording** Group RSPB: Royal Society for the Protection of Birds SDBWS: Surbiton District Bird Watching Society SWLEN: South West London Environment Network **TCV: The Conservation Volunteers** TLS: Thames Landscape Strategy TRP: The Royal Parks WCC: Wimbledon Common Conservators WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

10. Contact

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Richmond upon Thames Species Action Plan

Stag Beetle



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1. Aims

- To protect, conserve and enhance nationally significant populations of stag beetle in London Borough of Richmond upon Thames (LBRuT).
- To ascertain the reasons for uneven distribution of stag beetle populations across LBRuT.
- To increase public awareness of the importance of stag beetle and that of the dead wood habitat.

2. Introduction

The vernacular names of billywitches, oak-ox, thunder-beetle and horse pincher give an indication of the mythology that has evolved around the stag beetle (*Lucanus cervus*). Ancient associations with storms and magical powers led to the beetles being both feared and revered.

The stag beetle is Britain's largest terrestrial (ground-living) beetle, reaching up to 7cm in length. Featuring shiny chestnut-and-violet wing-cases, the stag beetle is characterised by possessing large mandibles (jaws), which are antler-shaped in the male, giving them their common name. These 'antlers' are used for fighting other males, whereas the female's mandibles, being smaller, are more powerful.

The stag beetle requires dead wood to complete its lifecycle. The eggs are laid underground in the soil next to logs, or stumps of dead trees and the larva (or grub) will spend up to seven years in the wood, slowly growing in size. 'Artificial' wood is also utilised, especially sunken fence posts. Perhaps surprisingly, London is nationally significant for stag beetle populations as the capital reported 30% of the 1998 national records. Adults emerge from mid-May until late July. Males emerge earlier and appear to be more active as they search for females to mate, and can often be seen flying on sultry summer evenings an hour or two before dusk. Adults are short-lived, as many are predated within days of emerging.



3. Current Status

The stag beetle has been recorded across most of London but the key boroughs are all south of the Thames, except for Hounslow and parts of LBRuT, although there are clusters of records in places such as Winchmore Hill and Hornchurch.

Gardens appear to be the most important habitat for the beetle in London, perhaps because most people are likely to be in their gardens when beetles are likely to be active. The significance of parklands in areas such as LBRuT is unclear as until recently there have been no systematic surveys in parks. Domestic gardens may be crucial to the conservation of the stag beetle in the capital given that many experts believe they do not fly far to find a mate. However, the increasing density of urban housing may militate against future domestic gardeners' contributions.

4. Specific Factors Affecting the Species

4. 1. Reduction of dead wood

In earlier centuries dead wood would have been reduced through the intensive management and loss of woodlands. Although some 'tidying up' still continues in woodlands and parks, managers are now much more aware of the need to retain dead wood as part of the woodland ecosystem and this will have benefited stag beetle at a local level. Similarly, changes in the management of parks have led to the retention of dead wood, although this policy was always maintained in Richmond Park. It is surprising how quickly a fallen tree, even a hardwood such as oak, rots away completely.

4.2. Loss of habitat to urban development

Habitat has been lost in London through suburban expansion in the inter-war years. Although the introduction of the Green Belt led to the restriction of suburban expansion, many of London's open spaces including woodland have been developed. Development will continue to result in the loss of stag beetle habitat, especially as there is a lack of awareness of the beetle's presence on sites as the adults are only visible for a few weeks a year.

4.3. Direct human impact

Adult stag beetle are attracted to the warm surfaces of tarmac and pavements, making them particularly vulnerable to being crushed by traffic or human feet. Public fear and misunderstanding of the species also leads to intentional killings of the beetles and their larvae.

4.4. Predation

Predators such as crows, magpies, cats, foxes, and others may have an adverse impact at the most vulnerable stage in the beetle's life cycle, when adults are seeking to mate and lay eggs. Indeed, it has been suggested that the rise in magpie and carrion crow numbers in the last decade has had a significant impact on stag beetle populations.

5. Current Action

5.1 Legal status

The stag beetle is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) but only to prevent trade. A major threat to stag beetle, especially in Europe, has been from private collectors, although this legislation aims to stop the species from being collected for sale at entomological fairs. It is also listed under Appendix III of the Bern Convention on the Conservation of European Wildlife and Natural Habitats 1979, and Appendix II of the Habitats Directive. Wimbledon Common, Richmond Park and Epping Forest are all designated Special Areas of Conservation (SAC) partly to help protect their stag beetle populations.



5.2 Mechanisms targeting the species

These current actions are ongoing. They need to be supported and continued in addition to the new action listed under Section 7.

5.2.1 Survey and research

In 1998, 2002, and 2006-2007, the Stag Beetle Focus Group conducted a national survey, collecting thousands of records for the species and providing an updated and considerably more accurate picture of the UK distribution.

The London Wildlife Trust piloted a survey in south London in 1997, which contributed to the 1998 national survey and continued surveying in key areas in 1999 and 2000. It has also actively promoted the species to the media, hosted a website recording form for stag beetle and a garden wildlife survey form for several species including the stag beetle as well as stimulating public interest in the beetle through press releases, newspapers, radio, TV and other media.

5.2.2 Richmond Park Stag Beetle Project

The Richmond Park Stag Beetle Project was set up in the early 2000s because Richmond Park was previously under surveyed. Wimbledon Common is not in LBRuT but it shares a boundary with Richmond Park across the A3 and both sites are SACs so a joint survey covering both areas was considered to be a good idea.

5.2.3 Advice

In 1998 PTES produced '*Stags in Stumps*', a leaflet aimed at land managers. Managers have since begun to take account of the species in site management plans, and it is likely this will develop further. In addition, wildlife gardening campaigns by London Wildlife Trust, local authorities and others have promoted stag beetle and dead wood conservation. In 2003 PTES published another leaflet, '*Stag Beetle Friendly Gardening'*, to promote these aspects, and London Wildlife Trust produced '*Stag Beetle; an advice note for its conservation in London*' specifically aimed at the capital, which also covered survey and planning issues.

5.2.4 Introduction of Loggeries

In LBRuT RBP has encouraged landowners, managers, schools and members of the public to introduce loggeries and nest boxes.

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)				
Action	Target Date	Lead	Other Partners	
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS	
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA	



GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs.	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, SWLEN
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups

Specific actions for Stag Beetles			
Action	Target Date	Lead	Other Partners
SBR01 – To cooperate with Richmond Park Stag Beetle Working Group to promote monitoring of the species in sites across LBRuT.	Annually	TRP	EN, LA, PTES, W&PCC
SBR02 – Promote the retention and/or use of natural and artificial stag beetle habitats by landowners and the public.	Annually	Working Group	LA, TCV



SBR03 – Identify 25 key sites for new stag beetle loggeries/buckets.	2019	Working Group	LA, TCV
SBR04 – Install at least 4 loggeries per year in LBRuT.	Annually	Working Group	LA, TCV
SBR05 – Encourage members of the public to support the PTES stag hunt survey.	Annually	Working Group	LA, RP & WC SBP & LNHS
SBR06 – Promote monitoring for a better understanding of the beetle's ecology and lifecycle.	2005	Working Group	As above + Site managers
SBR07 – Use stag beetle display stand at least at one relevant event or venue per year (i.e., Springtime Safari, etc.).	Annually	Working Group	Site Managers, SWLEN
SBR08 – Promote 2 public walk per year and an annual press release to keep stag beetle conservation on the local agenda.	Annually	Working Group	Site Managers and Community Groups
SBR09 – Support carrying out of local research on the effects of habitat and environmental factors on stag beetle populations of Richmond Park and consider the implications for other historic parklands.	2019	RP & WC SBP	Working group

7. Relevant Action Plans

7. 1. Local Plans

Ancient and Veteran Trees; Acid Grassland; Broadleaved Woodland, Private Gardens.

7.2. London Plans

Woodland; Open Landscapes with Ancient/Old Trees; Private Gardens; Railway linesides; Churchyards and Cemeteries; Hedgerows.

7.3. National Plans

Stag Beetle

8. Key References

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9. Abbreviations

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- LWT: London Wildlife Trust NE: Natural England PTES: People's Trust for Endangered Species RBP: Richmond Biodiversity Partnership SAC: Special Areas of Conservation SWLEN: South West London Environment Network TCV: The Conservation Volunteers TLS: Thames Landscape Strategy TRP: The Royal Parks WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust W&PCC: Wimbledon and Putney Commons Conservators RP & WC SBP: Richmond Park and Wimbledon Common Stag Beetle Partnership

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Richmond upon Thames

Species Action Plan

Swift



© Mike Pope

1. Aims

- To encourage and ensure the maintenance of habitable conditions for swifts in the London Borough of Richmond upon Thames (LBRuT).
- To contribute to the prevention of a further decline of the swift in the UK.
- To increase awareness of ways to accommodate swifts, e.g. through nestboxes.
- To encourage the reporting of swift sightings.

2. Introduction

The common swift (*Apus apus*) is a medium-sized migratory aerial bird which is a superb flier. It is plain sooty brown, but in flight against the sky it appears black. Swifts have elongated, cigar-shaped bodies, long, scythe-like wings and short, forked tails. They are often confused with swallows and house martins. Swifts visit the UK in the summer, arriving in the last week of April or early May, and staying only long enough to breed. They are most numerous in the south and east. Autumn migration to Central Africa begins in late July or early August. No other bird spends as much of its life in flight. In horizontal flight they are the fastest bird on the planet.

Estimates for the world population vary widely, with some estimates suggesting a population of 25 million and others up to 165,000,000 birds. Historically, swifts nested in ancient forests, but they adapted to man-made sites as their habitat shrank.

Swifts are known for their call which resembles a loud scream. Groups of swifts can form 'screaming parties' of 10-20 individuals in the summertime.

3. Current Status

Due to their propensity for flight it is rather difficult to accurately estimate the number of breeding pairs and non-breeding individuals. Their monitoring is complicated by the difficulty of finding occupied nests, by the weather-dependent and sometimes extraordinary distances from the nest at



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which breeding adults may forage, and by the often substantial midsummer influx of non-breeding individuals to the vicinity of breeding colonies. Since swifts do not normally begin breeding until they are four years old, non-breeding numbers can be large. While there were approximately 85,000 pairs in 1990, there were anywhere from 20,000 to 100,000 pairs in 2000 (British Trust for Ornithology, 2010). Another estimate is 87,000 breeding pairs in 2009 (Musgrove et al 2013). Swifts are estimated to have seen a 25-50% decrease in their breeding numbers in the UK between 1995 and 2015, which caused their placing in the amber category of the UK Red List (ibid.).

The Breeding Bird Survey (BBS) of 2016 identified a 51% decline in swift sightings within 1046 squares (the mean number of squares per year on which the species was recorded from 1995-2015) from 1995 to 2015. 2015-2016 saw a 7% decline (British Trust for Ornithology, 2016).

4. Specific Factors Affecting the Species

4.1. Habitat loss - Nest Sites

Swifts originally nested in caves, tree-holes and cliffs, but adapted to the urban environment and now nest in high man-made structures, under tiles, in the eaves, in lofts, spires and towers. Old buildings (pre-1944) are more conducive to swift nesting, while modern or re-roofed buildings tend to be impossible for swifts to nest in. Some buildings include anti-swift mechanisms such as swift-proof eaves or netted eaves to deny access. Renovation of old buildings should generally not be carried out during breeding season, due to the swift's nest-site fidelity—a swift will keep returning to the same nest. If it is not accessible one year, the swift might never return.

Loss of nesting sites through renovation can be mitigated through the inclusion of nest-boxes or "swift bricks". Swifts need an unobstructed flight path in front of their nest, which needs to be situated at a minimum height above ground level of 4-7 meters, with little exposure to direct sunlight. A method to attract swifts is to play swift calls near potential nests.

4.2. Food supply - Insects

Green spaces, especially in urban areas where swifts nest, are important in maintaining a steady food supply. Swifts exclusively feed on airborne spiders and flying insects, preferably at heights over 50m. This way of feeding could become harder to maintain due to drastically declining insect numbers. Studies suggest that bird species that depend on aerial insects for feeding themselves and their offspring have suffered much more pronounced declines in recent years than other perching birds that largely feed on seeds.

The main reason for the decline in insect numbers is thought to be a change in land use. Monocultures that create "biological deserts" decimate the insect population, as does the extensive use of insecticides, especially neonicotinoids. They are the most widely used insecticide in the world. Studies have shown that while the allowed levels do not directly kill insects, in the case of the honey bee, the insecticide severely affects its ability to communicate and navigate, thus negatively affecting its ability to reproduce.

4.3. Other factors - Migration Route

Little is known at present about all the factors contributing to the decline in UK breeding swifts. It is possible that fewer birds are surviving to return to the UK each year. New information from swifts carrying geo-locators helped reveal where they go in winter, and that a possible factor contributing to their dwindling population numbers is deforestation happening in Africa, where they spend much of the winter.



5. Current Action

The species is listed as 'amber' on both the UK and Irish national 2015 Red Lists in Birds of Conservation Concern (red being of high concern, amber being the next most critical group, and green being of least concern).

Swift Conservation is a national organisation that provides resources, services and information about swifts. Other groups, such as Action for Swifts, document others' experiences and procedures, as well as helpful links and links to swift webcams. Swifts Local Network is an initiative aiming to connect UK-based groups and individuals working on swift conservation.

London Biodiversity Partnership has not identified the swift as a species under particular threat in its 'London's BAP priority Species' list. The swift is also not a national UK BAP species. The London Borough of Camden has identified the Swift as a "Flagship Species for the Built Environment" and is taking action to arrest its decline. The Walthamstow Wetlands in London, which is Europe's largest urban wetland nature reserve, has retrofitted a Victorian chimney to house 50 openings and nesting sites for swifts. The London Borough of Southwark recently asked Greenspace Information for Greater London (GiGL) for a species alert map with GIS layers displaying a 500 meter buffer around house sparrow and swift records in Southwark. Any renovation or new build planning application falling within these zones is automatically asked to try and include nest boxes for swift and/or sparrow species.

Europe-wide conservation actions are not known, mostly due to the fact that the swift is listed as a Species of Least Concern by BirdLife International. The European population has remained stable between 1980 and 2013, and does not reflect regional changes such as the decline in the UK. This means that most conservation efforts are regional or national at the most.

5.1 Legal status

In the UK, swifts and their nests are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird. It is an offence to intentionally take, damage or destroy the eggs, young or nest of a swift whilst it is being built or is in use. The Act allows for fines or prison sentences for every bird, egg or nest destroyed.

5.2. Mechanisms targeting the species

5.2.1 Awareness-raising

Organisations that promote the inclusion of swifts in urban life in London are Swift Conservation, Action for Swifts, Concern for Swifts, Forest Hill and Lewisham Swift Group, Chiswick Swift Project, and Islington Swifts Group.

Swift sightings are recorded by the Breeding Bird Survey (BBS) and the <u>RSPB Swift Survey</u>. The RSPB also has a project called 'Swift Cities' that forges a partnership between local people, organisations and businesses to help protect the swift.

The British Wildlife Helpline provides extensive information on how to care for a swift short term and how to administer first aid as well as contact information for helpful organisations.

5.2.2 Survey and Research

RSPB has conducted a Swift Survey since 2009 that the public can contribute to by reporting swift nesting sites.



Ebird.org operates a very up-to-date species map that contains a rich database of sightings, including several swift sightings in LBRuT from 2017. To access it, go to ebird.org, click on the "Explore Data" tab at the top, click on Species Map and type in common swift.

5.2.3 National Research

As mentioned above, the Avian Population Estimates Panel estimated the population of swifts in the UK to be around 87,000 breeding pairs in 2009 (Musgrove et al. 2013). Nationwide research has been scarce, in part because swifts are so difficult to monitor.

5.2.4 Local Census Work

There is no organised local census work being done; the only available information on breeding pairs in the LBRuT can be obtained through the RSPB Swift Survey and the ebird.org species map.

5.2.5 Information dissemination

Swift Conservation: talks, leaflets, DIY nest boxes

RSPB: games for children, videos, links/advice

Oxford Museum of Natural History: leaflet

British Wildlife Helpline: extensive advice

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic Actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website.	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers.	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London.	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as	Ongoing	LA	Working groups



maintaining species already found to be present.			
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum.	Annual	SWLEN, LA	LA, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LWT, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. swift roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions targeting swifts			
Action	Target Date	Lead	Other Partners
RS01 – Create advisory note for LA planning officers with advice on when to consider swifts in a development and how to mitigate loss.	2019	Working group	London Swifts, LA
RS02 – Compile and provide an advisory note for LA /landowners on the identification/ maintenance/ creation and enhancement of swift nests on buildings and disseminate.	Within one year	Working Group	London Swifts, LA
RS03 – Survey modern council-owned high rise properties for their suitability for swift nesting and produce recommendations.	2019- 2022	Working Group	LA
RS04 – Work with schools and local HM Prisons to produce quality swift nest-boxes for local organisations.	10 per year	Working Group	

7. Relevant Action Plans

7.1 Local Plans

Private Gardens Habitat Action Plan.



7.2 London Plans

Chiswick Swift Project, Forest Hill and Lewisham Swift Group, Islington Swifts Group, Swift Conservation.

7.3 National Plans

Not listed in updated UK BAP of 2007. Several cities, council areas and counties such as North Lanarkshire, Suffolk, Newcastle and Glasgow have local species action plans or protection projects.

8. References

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Oxford University Museum of Natural History (no year). *The swifts in the tower*. <u>http://www.oum.ox.ac.uk/learning/pdfs/swifts.pdf</u>

Vogel, G. (2017). *Where have all the insects gone?* Science, <u>www.sciencemag.org/news/2017/05/where-have-all-insects-gone</u>.

Swift Conservation: The Built Environment - suggested Actions and Targets (see above)

Conwy Council Guidance (2016) - Action for Swifts, Swallows and Martins.



9. Abbreviations

- BAP: Biodiversity Action Plan BBS: Breeding Bird Survey BCT: Bat Conservation Trust DEFRA: Department for Environment, Food and Rural Affairs DIY: Do It Yourself FC: Forestry Commission FoBC: Friends of Barnes Common GA: Generic actions GIGL: Greenspace Information for Greater London GIS: Geographic Information System GLA: Greater London Authority LA: Local Authority (LBRuT) LBG: London Bat Group
- LBRuT: London Borough of Richmond upon Thames LNHS: London Natural History Society LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust NE: Natural England **RBP: Richmond Biodiversity Partnership** RSPB: Royal Society for the Protection of Birds SWLEN: South West London Environment Network TLS: Thames Landscape Strategy TRP: The Royal Parks WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

10. Contact

The Lead for this Species Action Plan is SWLEN.

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Email: hello@swlen.org.uk



Richmond upon Thames Species Action Plan

Tower Mustard



© Mike Waite

1. Aim

• To contribute to the conservation of tower mustard in the UK through the maintenance of London's population in the London Borough of Richmond upon Thames (LBRuT)

2. Introduction

Tower mustard (*Arabis glabra*) is a biennial, or sometimes short-lived perennial, plant of disturbed habitats on free-draining, sandy soils in grassy and wasteland places. It is a member of the cabbage family and it has smooth, grey-green leaves and produces pale yellow flowers on stems 30-100 centimetres tall. Tower mustard germinates in spring spending at least one season in a vegetative state before flowering the following May-June. It can produce abundant seeds, which appear to remain viable for many years with plants often reappearing on old sites after long periods of absence. It is nationally scarce and declining, currently known from only about 30 sites in England. Since open ground is required for germination, it will not survive when the habitat becomes overgrown. Its rarity and rather undistinguished appearance means that tower mustard is not a plant that often touches the public consciousness. It is not known to have ever had any significant culinary or medical use anywhere within its wide European range, though the Cheyenne of North America know it as a cure for the common cold.

3. Current Status

There is one large population of tower mustard in Greater London, at Stain Hill Reservoir in the LBRuT, which is a Site of Metropolitan Importance for Nature Conservation. This is one of the largest populations in the country, surpassed only by a couple of East Anglian sites. This site is in secure ownership and management, which this plan seeks to maintain. Other historical records have been traced, the majority of which are pre-20th century, and do not appear to offer scope for population restoration. The plan will therefore look to other ways in which LBRuT can contribute to research on the species and to targets for population creation by introduction to sites in the Borough in the future.



4. Specific Factors Affecting the Species

4.1 Protection and Management

The continued protection and suitable management of the Stain Hill Reservoir site is crucial to the survival of this species in LBRuT and Greater London. Management guidelines involve cutting back growth to prevent excessively dense vegetation and shading from occurring and some light disturbance needs to be carried out when the grassland becomes closed and tussocky. Cutting should take place after mid-winter (as the plant retains seed in the pods throughout the winter) or alternatively the seeding stems should be broken off before cutting and returned to the site. The northern part of the embankment needs to be strimmed to remove excess vegetation and to disturb the accumulated vegetation litter and the soil. Overgrazing by rabbits means that plants may need to be caged to ensure some return of seed to the soil, but cages should be removed during the winter to allow rabbits access to graze and disturb the vegetation.

4.2 Other

Other historic sites in London have been lost through development or changes to habitat. Nationally, it has suffered due to the loss of open habitat on heathland, through building development, agricultural improvement and intensification, forestry and neglect.

Habitat neglect results in a lack of open ground for regeneration and the development of coarse competing vegetation. It is also vulnerable to high levels of overgrazing by rabbits.

5. Current Action

5.1 Legal status

Tower mustard is classified as *Vulnerable* in the UK.

Tower mustard receives the same protection as all other wild plants in the UK through the Wildlife and Countryside Act 1981 (as amended). Therefore, it may not be uprooted without the permission of the landowner.

Stain Hill Reservoir has been designated as a Site of Metropolitan Importance for Nature Conservation.

5.2 Mechanisms targeting the species

These current actions are ongoing. They need to be supported and continued in addition to the actions listed under Section 6.

5.2.1 Local management

Thames Water Utilities manage the Stain Hill Reservoir site to ensure the continued existence of the colony of tower mustard.

5.2.2 National mechanisms

Nationally, tower mustard is included in English Nature's Species Recovery programme and Plantlife's *Back from the Brink* programme. *Back from the Brink* recovers wild plants through practical, hands-on response to the crisis of species loss and decline in Britain.

5.2.3 Advice

Plantlife advises landowners and managers of the importance of this species and the most appropriate management for its conservation under the *Back from the Brink* programme. Advice is



available to anyone managing a site for one of the *Back from the Brink* species, whether the site is a nature reserve or in private or public ownership.

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners & key developers	2019	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, LWT, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, LWT, WWT, Local media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups



GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanisation.	Ongoing	LA	Working groups
Specific actions targeti	ng the tov	ver mustard	
Objective 1: Ensure the protection and suitable management of the extant population. Target: No long-term reduction in size of the Stain Hill population, measured annually			
Action	Target Date	Lead	Other Partners
TM01 – Produce advice and guidelines for the management of Stain Hill Reservoir to safeguard the tower mustard population.	2019	LA, TV	V SWLEN
TM02 – Continue management of Stain Hill Reservoir population.	Ongoing	g TW	Plantlife
TM03 – Monitor population and reassess status at Stain Hill and supply data to Plantlife for databasing in co-operation with BSBI Threatened Plants Database.	Annually	y TW, LA	A SWLEN, Plantlife,
TM04 – Provide tower mustard seeds to the Millennium Seed Bank at Wakehurst Place.	Annually	y TW, LA	A Plantlife, RBGK
TM05 – Investigate the viability of introducing a new population of tower mustard within LBRuT.	2020	LA, SWLEI	N Plantlife, RBGK
TM06 – Create and produce an online interpretation for tower mustard.	2021	LA	SWLEN

7. Relevant Action Plans

7. 1. Local Plans

Acid Grassland

7.2. London Plans

Wasteland, Private Gardens, Churchyards and Cemeteries, Heathlands, Acid Grassland, Built Structures, Ponds, Lakes & Reservoirs Audit

7.3. National Plans

Tower Mustard Species Action Plan

8. References

Davis R (1999). Species Action Plans for Plants: Tower Mustard, Plantlife.


9. Abbreviations

- BCT: Bat Conservation Trust BSBI: Botanical Society of the British Isles DEFRA: Department for Environment, Food and Rural Affairs FC: Forestry Commission FoBC: Friends of Barnes Common GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority LA: Local Authority (LBRuT) LBG: London Bat Group LNHS: London Natural History Society
- LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust NE: Natural England RBGK: Royal Botanic Gardens Kew RBP: Richmond Biodiversity Partnership SWLEN: South West London Environment Network TLS: Thames Landscape Strategy TRP: The Royal Parks TW: Thames Water WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

10. Contact

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Richmond upon Thames

Species Action Plan

Water Vole



1. Aim

• To conserve water vole population in London Borough of Richmond upon Thames (LBRuT) and to increase their range and numbers for the benefit of current and future generations.

2. Introduction

Water voles (*Arvicola terrestris*) can be distinguished by their hidden ears, rounded snout and hairy tail, unlike a brown rat whose ear are visible, have a more pointed snout and a hairless tail. The former widespread distribution and abundance of the water vole has meant that it has attracted little or no previous conservation interest. However, its rapid decline in numbers and the resulting fragmentation of its population across the UK is of great concern.

The water vole is potentially an excellent flagship species, whose presence reflects healthy waterside habitats and their associated plant communities. As one of the main characters in the children's classic *The Wind in the Willows*, the water rat, or water vole as it is properly called, is a well-liked and familiar animal amongst the general public. Water voles are not overly sensitive to the presence of people and may be easily seen during the day where they still survive. This high profile presents opportunities to bring the species' plight to the attention of people living in LBRuT, publicise progress of the Action Plan and involve the local public in its conservation.

3. Current Status

The changing fortunes of the British water vole population through the 20th century were revealed by the pioneering national surveys conducted by the Vincent Wildlife Trust in 1989-90 and 1996-98. These surveys confirmed that the species has become progressively scarcer along our waterways since the 1930s, due to habitat loss and land-use changes associated with the intensification of agriculture in the wider countryside. Since the 1980s, this decline has accelerated due to predation by feral American mink (established as escapes from fur farms). The decline has now developed



into a serious population crash with a further 88% loss to the remaining populations in only seven years (1991-1998). This makes the water vole the most rapidly declining mammal in Britain.

In Greater London, the water vole has disappeared from over 72% of the sites it occupied prior to 1997 (London Mammal Group Greater London Water Vole Survey 1997). Although the species still retains a widespread distribution around much of London's periphery (especially in outer boroughs including LBRuT, neighbouring LB Hounslow and to a lesser extent RB Kingston upon Thames), populations are highly localised and fragmented.

In LBRuT, the water vole is currently confined to a couple of extant sites including London Wildlife Trust's (LWT) Crane Park Island reserve on the Crane Corridor. Outlying sites on the edge of LBRuT include a population south-west of Feltham Marshalling Yards in London Borough of Hounslow further west along the Crane Corridor. A population was successfully introduced at the Wildfowl & Wetlands Trust's London Wetland Centre at Barn Elms. Populations reported at Leg O' Mutton Reservoir at Lonsdale Road, Barnes in the late 1980s are believed to be extinct. However, opportunities exist for further introduction programmes at certain sites in LBRuT e.g. the Beverley Brook in Richmond Park, the Longford River in Bushy Park, and Home Park.

4. Specific Factors Affecting the Species

The many factors that influence the survival of this species are outlined below. They are listed in order of priority, but each may have a greater or lesser local effect depending on the robustness of the individual populations and their habitat. More information about such factors and best practice management for water voles can be found at sources including Strachan *et al.* (2011) or suitable weblinks e.g. <u>http://www.gloucestershirewildlifetrust.co.uk/sites/wt-main.live.drupal.precedenthost.co.uk/files/Water%20Vole%20Booklet%20final_0.pdf</u>

4.1 Fragmentation and isolation of habitats and populations

This is viewed as being a major factor of concern. Loss of wetland habitats has reduced populations and left them more vulnerable to other threats such as predation. Development, land drainage, low water levels, river engineering and changes in waterside management have all destroyed habitat. Intensive grazing and trampling by livestock along watercourses also contributes greatly to habitat loss in some of the more rural boroughs, but equally might apply to LBRuT where the impact of both livestock and deer herds should be considered.

4.2 Predation by Mink

The arrival and spread of American mink along a waterway has been found to have serious consequences for water voles and rapid extinction of some water vole colonies has been recorded. Mink predation is influenced and exacerbated by other threats such as habitat loss. The current status of mink in the London Boroughs is unknown. However, there have been recent reports of mink in LBRuT at Ham Lands, Longford River, the Beverley Brook, London Wetland Centre and the River Thames towpath at Teddington. These reports flag up the vulnerability of extant water vole populations, which lie in close proximity to where mink have either been seen or left field signs.





Figure 1 Location of existing water vole populations (black), as well as potential reintroduction (orange) and potential recolonization (blue) sites.

4.3 Disturbance of riparian habitats

In the past, canalisation and subsequent dredging operations as part of flood defence management caused the most significant form of disturbance. These modifications have had a drastic effect on water vole habitat causing the destruction of burrows, loss of emergent and in-stream vegetation and the re-profiling or hard engineering of the banks. Mechanical cutting and removal of bankside vegetation may also be highly disturbing to water voles.

Water voles are relatively tolerant of human recreational activities (dog walking, angling and boating) along waterways as long as they have vegetation cover in which to hide.



4.4 Deterioration of riparian habitats and reduction of flow

Water voles appear to be relatively tolerant of low water quality, but the full impacts of different types of pollution such as industrial effluent are unknown. Low flows and droughts, such as those caused by over-abstraction of groundwater, can lead to the loss of water voles. By contrast, prolonged flooding can also be detrimental. Furthermore, increased shading by trees and the spread of Indian (Himalayan) balsam adds further pressure to riparian vegetation along margins of the River Crane, ultimately making the habitat less suitable for water voles.

4.5 Rodenticides and rat control

Poisoned grain or similar rodenticides placed for rats or mice may be taken by water voles if placed along a watercourse. The proliferation of rats along a waterway, attracted by litter and human refuse, may be detrimental to water voles which may be out-competed or even fall prey to their larger cousins. Carried out carefully, rat control has been shown to be beneficial to water voles.

When controlling rats near watercourses there are a number of ways in which unnecessary destruction of water voles can be avoided:

- 1. Check thoroughly for water vole signs before treatment on waterways.
- 2. If water voles are present the only safe option is to live trap. These should be carefully sited and checked twice per day to release captured voles.
- 3. Do not use back-break or snap traps.
- 4. If there is no feasible alternative, poison should be covered or enclosed in a bait box and placed at least 5m from the water's edge.
- 5. Do not place poison or traps in burrow entrances (this would constitute a breach of the law).
- 6. Place poison off the ground if possible as water voles are less likely to climb than rats.
- 7. Avoid the use of poisoned grain, pellets or liquid bait; use instead wax or soap blocks.
- 8. The treatment site should be frequently inspected. If any dead water voles are found immediately review the control method used.
- 9. Report any water vole sites to your local wildlife trust.

5. Current Action

5.1 Legal Status

The water vole has legal protection under the Wild Mammals (Protection) Act 1996 and Schedule 5 of the Wildlife & Countryside Act 1981 (as amended in April 2008).

The Wildlife & Countryside Act makes it an offence to:

- Intentionally capture, kill or injure water voles
- Damage, destroy, or obstruct access to any structure or place which water voles use for shelter or protection
- Disturb water voles while they are using such a place
- Possess, sell, control or transport live or dead water voles.

Further information: https://www.gov.uk/guidance/water-voles-protection-surveys-and-licences



5.2 Mechanisms Targeting the Species

5.2.1 Advice

Practical advice about water vole conservation and habitat management has been summarised in *The Water Vole Conservation Handbook* (Strachan et al. 2011). Educational resources are available through The Wildlife Trusts. There are also a number of resources available on the internet, for example see: <u>http://mwhg.org.uk/wordpress/wp-content/uploads/2015/05/Section-A-1.pdf</u>

5.2.2 Waterway management

Flood defence management of waterways is being carried out in accordance with best practice guidelines to maintain water vole populations.

River Basin Management Plans, Local Environment Agency Plans (LEAPs) and Water Level Management Plans now consider the requirements of Water Voles and implement actions when appropriate. This applies to all LEAPs produced for rivers in LBRuT.

5.2.3 Research and recording

National research is ongoing and investigating translocation and reintroduction as methods to aid the species recovery. This includes the water vole introduction that was undertaken in May 2001 at the London Wetland Centre (WWT), which to date has maintained a viable population.

5.2.4 Promotion of conservation

Richmond Council, Richmond Biodiversity Partnership, LWT, WWT, Historic Royal Palaces (HRP), Friends of the River Crane Environment (FORCE), Thames Landscape Strategy (TLS), The Royal Parks (TRP) and other organisations are already promoting water vole conservation through habitat enhancement projects, surveys, talks and other publicity campaigns.

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	Ongoing	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS



GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 – Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, FORCE, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, FORCE, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions targeting water voles			
Action	Target Date	Lead	Other Partners
VW01 – Collate existing records of water vole and mink in LBRuT.	Ongoing	Working group	EA, LA, LNHS, GLA, TRP, HRP, WWT
VW02 – Add new records of water voles and mink to GiGL databases through ad hoc sightings and established monitoring programmes.	Reviewed annually	Working group	GiGL, EA, LA, LWT, RBGK, TRP, HRP, TLS, WWT
VW03 – Safeguard current or potential water vole sites where land is grazed and encourage the protection of water courses by fencing.	Reviewed annually	HRP, TRP, WWT	NE, EA, LA
VW04 – Undertake the humane control of mink as a conservation tool where they threaten water vole populations.	Reviewed annually	HRP, TRP, WWT	EA, LA, LWT, angling clubs



VW05 – Ensure that reviews of Environment Agency projects and plans in LBRuT take account of strategic habitat enhancement projects focussed on expanding water vole populations.	As reviewed	EA	LA, TRP, HRP, TLS, FORCE, BBP, WWT
VW06 – Ensure sympathetic water vole friendly land management is in practice on suitable sites, which includes an appropriate level of safeguarding control of mink.	2022	NE, LA	EA, HRP, TCV, LWT, TRP, FORCE, BBP, WWT
VW07 – Assess the feasibility of water vole reintroduction on at least two sites with suitable publicity.	2022	HRP, TRP	EA, NE, WWT, LA, TLS, FORCE
VW08 – Update and review the current leaflet about water voles, which should include awareness about the inappropriate use of rodenticides in areas supporting the species.	2022	RBP	LA
VW09 – Hold at least four on-site field visits to share and exchange best practice with respect to water voles and mink.	2023	Working group	FG, TCV, WWT, HRP
VW10 – Hold at least four walks / talks about water vole conservation.	2023	FORCE, WWT	LWT, LA, TRP, HRP, FG

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8. Abbreviations

- **BBP: Beverley Brook Partnership** BCT: Bat Conservation Trust DEFRA: Department for Environment, Food and Rural Affairs EA: Environment Agency FC: Forestry Commission FG: Friends Groups FoBC: Friends of Barnes Common FORCE: Friends of the River Crane Environment GA: Generic actions GIGL: Greenspace Information for Greater London GLA: Greater London Authority **HRP: Historic Royal Palaces** LA: Local Authority (LBRuT) LBG: London Bat Group
- LBRuT: London Borough of Richmond upon Thames LEAP: Local Environment Agency Plans LNHS: London Natural History Society LTWGS: London Tree and Woodland Grant Scheme LWT: London Wildlife Trust **NE: Natural England RBGK- Royal Botanic Gardens Kew RBP: Richmond Biodiversity Partnership** SWLEN: South West London Environment Network TCV: The Conservation Volunteers TLS: Thames Landscape Strategy **TRP: The Royal Parks** WLO: Wildlife Liaison Officer (Metropolitan Police) WWT: Wildfowl and Wetlands Trust

9. Contact

The Lead for this Species Action Plan is Ian McKinnon.

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In memoriam: The Water Vole Species Action Plan is dedicated to the late Rob Strachan who was so influential in developing the original London-wide Water Vole Species Action Plan, which has been so influential on the development of a Water Vole Species Action Plan for LBRuT:

https://www.wildcru.org/news/tribute-rob-strachan/

http://www.otterspecialistgroup.org/Bulletin/Volume31/Obituary_Rob_Strachan_1958-2014.html



Richmond upon Thames

Species Action Plan

White-letter Hairstreak and Elm



1. Aims

- To safeguard existing populations of the white-letter hairstreak butterfly in London Borough of Richmond upon Thames (LBRuT) and to achieve a more widespread distribution.
- To maintain elm trees in suitable habitats that support populations of the butterfly and increase the area of habitat.

2. Introduction

The white-letter hairstreak (*Satyrium w-album*) is a small and highly elusive butterfly which gets its name from the white letter 'W' on the underside of its hindwings. It is a canopy species and is usually seen high in the treetops, often as just a dark speck against the sky, flying with an erratic, spiralling flight. It is only rarely seen on the ground when the adult butterflies occasionally come down to feed on nectar in flowers.

The lifecycle of the white-letter hairstreak is totally dependent on elm trees (*Ulmus spp*). This is its sole larval foodplant, on which its lays its eggs and which provides food for the caterpillars. Various native and hybridised elm species are used, including wych elm (*Ulmus glabra*), English elm (*Ulmus procera*), smooth-leaved elm (*Ulmus minor*) and Dutch elm (*Ulmus x hollandica*), although wych elm may be preferred.

The white-letter hairstreak suffered a precipitous decline in the 1970s and early 1980s with the arrival of a more aggressive strain of Dutch Elm Disease (DED) which devastated Britain's native elm population.

The species was greatly helped by its ability to breed on some of the new Disease Resistant Elm (DRE) cultivars, particularly *Ulmus* 'Sapporo Autumn Gold', which were developed in the wake of DED and which have been a lifeline for the species.

The white-letter hairstreak is single brooded with adults on the wing from the mid-June to the beginning of August (depending on the weather). It can also be found in its egg stage which lasts from August until the following April.



The butterfly forms discrete colonies which are sometimes very small containing only a few dozen individuals. Colonies are typically found on a small clumps of trees in hedgerows or woodland edges but can also survive on a single, isolated tree. The butterfly will reuse the same habitat year after year, but also appears to be adept at colonising new habitat.

The species is equally at home in rural and urban environments. It is by some distance the rarest butterfly which can be found in London.

3. Current Status

Legal Status

The UK Biodiversity Action Plan lists the white-letter hairstreak a priority species. It is a Section 41 Species of Principal Importance under the 2006 NERC Act in England. It is protected under Schedule 5 of the 1981 Wildlife and Countryside Act (a licence is needed for trading). It is on the IUCN Red List of Threatened Species and it is a London Biodiversity Action Plan Priority Species. Finally, it is a High Priority species in Butterfly Conservation's Regional Action Plan for South East England (currently in draft stage).

National Status

The State of the UK's Butterflies 2015 (Fox et al. 2015) report from Butterfly Conservation and the Centre for Ecology and Hydrology describes the species as having suffered "very substantial decreases" in both abundance and occurrence over the last four decades. The abundance trend for the White-letter Hairstreak between 1976 and 2014 was -96%. This represents the largest decline in abundance of any British butterfly during this period.

The reason for this decline was catastrophic habitat loss as elms were lost in the 1970's and 1980's by the effects of DED. By the late 1980's the species was extremely scarce and there were grave concerns that it might become extinct in the British Isles.

In the 1990's however, increased recorder effort found the species surviving albeit in low numbers and some new colonies were even discovered. Contrary to popular belief, some elm trees do survive and provide habitat for the butterfly.

The future of the species is still delicately poised but at least it is healthier than the situation in the 1980s. Although the effects of DED continue to be felt, with many local colonies becoming extinct as their particular trees succumb to the disease, the white-letter hairstreak has demonstrated the ability to disperse and colonise new elms as well as planted, non-native trees.

4. Specific factors affecting the species

As the white-letter hairstreak is a monophagic species, entirely reliant on *Ulmus spp*, a Species Action Plan for the butterfly is of necessity also one for the trees.

White-letter hairstreaks require sexually mature elm as the eggs, laid on the branches the previous summer, hatch into larvae in mid- March and immediately feed on the elm flowers before progressing to the seeds. Elm becomes sexually mature (flowering and fruiting) after around twelve to fifteen years of growth. Many elms however succumb to DED at around this age.

Recent research in the Low Countries however has shown that larvae may be able to survive on immature, flowerless trees by remaining dormant for up to six weeks until the leaves flush. This would explain the occasional sightings of the butterfly on English elm suckers.

There are different types of elm, however *Ulmus* species are highly variable and readily hybridize which makes precise identification notoriously difficult. The following species however are present in the London area:



- English elm (*Ulmus procera* or *Ulmus minor var. vulgaris*) is widespread through London but all trees are clones only spreading by suckering. It is highly susceptible to Dutch Elm Disease (DED) and usually does not reach flowering age before succumbing. Where it suckers up into large stands however it is possible to find the butterfly.
- Wych elm (*Ulmus glabra*) also occurs throughout the region although its distribution is patchy. It is susceptible to DED but, as it spreads by seed, it has a higher resistance than English Elm. Wych Elm is the favourite native host for the white-letter hairstreak and large, flowering trees can still be found in a number of places.
- Smooth-leaved elm (*Ulmus carpinifolia* or *Ulmus minor var. minor*) is the third native species present in the area. It spreads both by seed and suckering but is only locally abundant. This tree also hosts the butterfly.
- Dutch elm (*Ulmus x hollandica*) is a naturally occurring hybrid of wych elm and smoothleaved elm and has a degree of resistance to DED. It is a very variable tree and therefore not easy to identify. It supports white-letter hairstreak.
- Huntingdon elm (*Ulmus hollandica 'Vegeta'*) is a cultivar of Dutch elm which was widely planted in the past in streets and parks and, although still susceptible to DED, has considerable resistance. A mature, 70 to 80 foot elm in London is probably a Huntingdon and is likely to support a colony of the butterfly.
- Ulmus 'Sapporo Autumn Gold' is a cross between Siberian elm (*Ulmus pumila*) and Japanese elm (*Ulmus japonica*) and was the first of the disease resistant cultivars. It was widely planted in the 1980s in schools, parks and gardens, often as a replacement for other elms killed by the disease. There are now many mature trees and these have been of huge benefit to the white-letter hairstreak as the Sapporos provided habitat when other elms were being decimated. Indeed, wherever there are Sapporos in London there is the near certainty of finding a colony. However, it is not a long lived tree and few are now planted.
- Ulmus 'New Horizon' is a newer cultivar currently being planted in London and comes from the same cross as Ulmus 'Sapporo Autumn Gold'. A colony of white-letter hairstreak was found in 2017 on a New Horizon in Vauxhall Pleasure Gardens. This is significant because the butterfly has not been recorded breeding on this elm before. Butterfly Conservation caries out trials of new disease resistant elm cultivars both to assess the quality of the trees and their use for breeding by the white-letter hairstreak (Brookes 2016). At present we cannot definitely say that New Horizon hosts the white-letter hairstreak, which would require the finding of eggs. However it seems 99% certain that is does.
- *Ulmus lutece* is a disease resistant cultivar of Dutch elm which has recently been shown to host the species on a tree on the Isle of Wight.
- Not all the DRE cultivars however host the butterfly. The American elm (*Ulmus americana* 'Princetown') has been widely planted in South London and Surrey but it is not used by the butterfly. It also may be susceptible to DED.
- European white elm (*Ulmus laevis*) is native to continental Europe and hosts the butterfly. It is not a disease resistant tree but has very high level of resistance due to the presence of the triterpene Alnulin in the bark which deters the vector beetles. It has been utilized in some planting projects in the UK and is particularly suited to riparian environments as it is highly tolerant of water logging.



Local status

In his book, "The Butterflies of the London Area" (1987), C.W. Plant says that the white-letter hairstreak has always been uncommon - and very local - in the London area. In South London a single colony is reported: this has been there since 1940 or earlier and remains to this day.

The white-letter hairstreak however is present in a number of locations in LBRuT and this is reflective of LBRuT's superb elm legacy. Quite apart from their significance in supporting this rare butterfly, the trees themselves could be made an important ecological feature of LBRuT and promoted as such.

Moreover, native and hybridised elm is an important species in the landscape and maintains a number of ecological relationships. At least 29 species of moth, for example, are associated with elm, including the Section 41 white-spotted pinion and local species such as the dusky-lemon sallow – as is other wildlife as well.

Good elm locations in LBRuT are:

- The Thames towpath at Ham Riverside which has many mature trees. These are European white elms (*Ulmus laevis*) identified in spring by their white flowers and seeds on stalks. These are rare and significant trees and fortunately are not likely to succumb to DED.
- There is a grove of mature Sapporo Autumn Gold close to Ham House
- Barnes Common has many large wych elms and there is a huge, mature elm on Putney Lower Common.
- The towpath from Hammersmith Bridge down to Small Profit Dock Gardens, Leg of Mutton LNR, is particularly rich in large elms.
- Ham Lands has a number of stands which may be either smooth-leaved elm or Dutch elm.
- The new elm avenue in Richmond Park (close to Petersham Gate) is providing a new habitat opportunity for the white-letter hairstreak as they create a link to the wych elms at the corner of Petersham Rd and Star and Garter Hill only a short distance away.



Ulmus 'Sapporo Autumn Gold' in flower at Ham Riverside, March 2017

The Local Biodiversity Action Plan for Richmond

5. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

Generic actions (across all Richmond SAPs/HAPs)			
Action	Target Date	Lead	Other Partners
GA01 – Promote available grant schemes (information available on SWLEN website) to encourage appropriate habitat management.	Ongoing	SWLEN	DEFRA, FC, TRP, LTWGS
GA02 – Update Richmond biodiversity leaflets and reprint/put on RBP/SWLEN website	2019	SWLEN, Working groups	LA
GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	Ongoing	LA, SWLEN, Working groups	GLA, NE, WLO
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, FORCE, WWT, TRP
GA07 – Promote and support a programme of events, talks and articles, posts and blogs in the local press and online	Annual	SWLEN	LBG, FORCE, WWT, Local Media
GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups



Specific actions targeting white-letter hairstreak and elm			
Action	Target	Lead	Other partners
	date		
WLH01 - Woodland and hedgerow	Ongoing	LA	
management to protect existing elms.			
Conservation of native and naturalised elm			
trees (likely to be wych elm, smooth-leaved			
elm or Dutch elm) needs to be at the core			
of the strategy.			
WLH02 - Only fell diseased trees for health	Ongoing	LA	
and safety reasons. Standing deadwood is			
excellent habitat for saproxylic and other			
invertebrates.			
WLH03 - Where possible ensure stands of	Ongoing	LA,	
elm with DED are included on a 7 year			
coppice cycle, re-growth is vigorous and is			
too small for the beetles to use.			
WLH04 - Identify the locations in the	2020	SWLEN, LA	
borough of healthy elm (likely to be wych			
elm, smooth-leaved elm or Dutch elm)			
through a citizen science project.			
WLH05 - Once elms are mapped, retain	2023	LA	
other trees in close proximity known to be			
nectar sources for the adult white-letter			
hairstreak: Limes (<i>Tilia spp</i>), field maple			
(Acer campestre) and ash (Fraxinus			
excelsior).	Our sector s	1.0	
WLHU6 - Avoid clipping eim neagerows	Ongoing	LA	
until after July to ensure the larvae have a			
pientiful supply of nowers and young			
WI HOZ Plant a variaty of Diagona	Ongoing	1.0	
Posicitant Elms (DPE) that support white	Ongoing	LA	
letter bairstreak as part of the strategy of			
consorving the native and hybridized trees			
European white olm (<i>Illmus lagvis</i>) would			
be a suitable species for planting in the			
vicinity of the Thames			
WI H08 - Locate a suitable location for a	2020	SWI EN LA	
tree nursery.	2020		
WLH09 - Elms should be monitored for the	Ongoing	Butterfly	
presence of white-letter hairstreak. This can	Chigoing	Conservation	
be done by observing the canopy for the		and	
adult butterflies during the summer flight		volunteers	
period or by searching for the presence of			
eggs during winter.			
WLH10 - Native, naturalised and DRE	2020	SWLEN, LA	
cultivars should be regularly monitored for		, .	
symptoms of DED, through citizen science			
project.			



6. References

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7. Abbreviations

DED: Dutch Elm Disease DRE : Disease Resistant Elm LA: Local Authority (LBRuT) LBRuT : London Borough of Richmond upon Thames LNR: Local Nature Reserve NERC Act : Natural Environment and Rural Communities Act IUCN : International Union for Conservation of Nature SWLEN : South West London Environment Network

8. Contact

The Lead for this Species Action Plan is Bill Downey

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Richmond upon Thames

Species Action Plan

Pollinators



Bumble bee on cotoneaster © Tasha Hunter

1. Aims

- Ensure the needs of pollinators are represented in local plans, policy and guidance.
- Understand current pollinator habitat within the London Borough of Richmond upon Thames (LBRuT).
- Protect, increase and enhance the amount of pollinator habitat in LBRuT.
- Encourage appropriate management of pollinator habitat.
- Increase awareness of pollinators and their habitat needs with local residents, businesses and other landowners.

2. Introduction

There are at least 1500 species of insect pollinators in the UK. The honey bee normally lives in hives managed by beekeepers. Others, like many species of bumblebees, solitary bees, moths, butterflies and hoverflies live in the wild (DEFRA 2014a).

Pollinators work by transferring pollen from plant to plant while they forage for food, allowing fertilization of the plants to occur. Some crops, like raspberries, apples and pears, particularly need insect pollination to produce good yields of high quality fruit. If pollinator populations were to decline, it would be much harder and costly for farmers to produce crops at the scale that is required for today's demands.

Pollinators are also responsible for the diversity of plants and wildflowers, creating our beautiful countryside and gardens. The abundance of fruits and seeds go on to support the healthy ecosystems and the higher food webs (DEFRA 2014a). It is also well documented about the importance of the natural world on human health and well-being (DEFRA 2014b). Butterflies and moths are not as important to pollination as the bee and fly species.



A local environment abundant in flower-rich habitats will help support sustainable pollinator populations and making places more attractive for people to live, visit and work in.

3. Current Status

Due to a lack of standardized monitoring for establishing abundances for many insect species (with the exception of butterflies and moths). It can be difficult to compare abundances and trends in different areas and an aim of the National Pollinator Strategy to establish a standardized system (DEFRA 2014a)

What can be ascertained is the loss or extinction of a species that has occurred and the charity Buglife (2019) provides the following statistics:

- Half of our 27 bumblebee species are in decline.
- Three of these bumblebee species have already gone extinct.
- Seven bumblebee species have declined by more than 50% in the last 25 years.
- Two-thirds of our moths and 71% of our butterflies are in long term decline.
- Across Europe 38% of bee and hoverfly species are in decline; only 12% are increasing.

Over 97% of all flower rich grasslands (the size of Wales) have been lost in England since the 1930's and this is mirrored in other parts of the UK (DEFRA 2014a).

Pollinators need many of the things humans need – food, shelter and nesting areas. Pollinators need food (nectar and pollen) throughout the season from March through until September. Many plants and trees can provide these food resources, including many so called 'weeds' such as dandelions and thistles. In addition to flowers, many pollinators need other food resources to support their different life stages – for example butterfly and moth caterpillars need particular plants to feed on.

For shelter and nesting, dense vegetation such as tussocky grassland, scrub, mature trees, and piles of wood and stone can provide essential habitat for hibernating pollinators. Many species overwinter as adults including queen bumblebees, and some butterflies and hoverflies, others as eggs, larvae or pupae. Old burrows and dense vegetation are used by bumblebees, with sunny slopes and dry ground used by ground-nesting bees such as mining bees.

Where possible the RBP and Richmond Council will join forces and participate in other local, regional or national pollinator programmes or projects. More joined up collaborative action for pollinators will help ensure a future for these very important species. Key national initiatives include Buglife's B-Lines programme (Buglife 2019a) which aims to create a network of wildflower-rich areas across the UK.

4. Specific factors affecting pollinator populations

The most significant factors leading to these declines in pollinator numbers include:

4.1. Habitat loss

The most significant cause of decline is the loss and degradation of habitats which provide food, shelter and nesting sites for pollinators. The loss of wildflower-rich grasslands is one of the most important issues. Over 3 million hectares of these habitats have been lost in England alone since the 1930s, the loss being attributed to more intensive farming and urban/industrial development.

4.2. Fragmentation of habitat

Remaining habitat is being lost due to development of brownfield sites and demand for housing.



4.3. Pesticides

There is growing evidence that the use of pesticides is having harmful effects on pollinators including honeybees, wild bees and butterflies. Wider effects throughout ecosystems are also of concern and pesticides have been implicated in other declines such as farmland birds and soil organisms. The use of 26 neonicotinoids is of particular concern. These are systemic pesticides which can be applied as a seed dressing (the preferred delivery mechanism) or spray and have a high toxicity to insects.

4.4. Climate Change

Long term changes can deprive pollinators of food supplies at times when they need them, increase their exposure to parasites and diseases, or change habitats so that they are no longer suitable. There may be gains as well as losses but a resilient network of good pollinator habitat across the area is needed for them to be able to adapt and take advantage of changes.

5. Current Action

5.1. Legal Status

There is currently no legal status attached to pollinators however the Government's National Pollinator Strategy for England (DEFRA 2014a) sets out a 10-year plan to help pollinating insects survive and thrive across England. The Strategy outlines actions to support and protect the many pollinating insects which contribute to our food production and the diversity of our environment. It is a shared plan of action which looks to everyone to work together and ensure pollinators' needs are addressed as an integral part of land and habitat management.

In particular, the Strategy asks local authorities to take a lead across many of their work areas and duties, including their role in local planning and also as managers of public and amenity spaces, brownfield sites, schools, car parks, roadside verges and roundabouts.

5.2. Research and recording

Although there is an understanding on honey bees there is little know about other pollinators. The National Pollinator Strategy identifies ongoing research is a priority action for the Government and other organisations (DEFRA 2014a).

6. Actions

Please note that the partners identified in the tables are those that have been invited to be involved in the process of forming the plan. It is not an exclusive list and new partners are both welcome and needed. The leads identified are responsible for coordinating the actions - but are not necessarily 'implementers' themselves.

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GA03 – Distribute and promote Richmond biodiversity leaflets and relevant online advice to all LBRuT planners and key developers	Ongoing	LA, SWLEN, Working groups	gla, ne, wlo
GA04 – Contribute to database of species records in London	Annual	SWLEN, Working groups	GIGL, WWT, TRP, LNHS
GA05 – Encourage planning applications to preserve/enhance wildlife corridors within their scheme. Promote encouragement of species which have not been found during surveys, if within their range, as well as maintaining species already found to be present.	Ongoing	LA	Working groups
GA06 - Promote and support a co-ordinated programme of guided walks, attracting a total of at least 500 people per annum across all HAPs and SAPs	Annual	SWLEN, LA	LA, BCT, FORCE, WWT, TRP
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GA08 – Prepare a connectivity strategy and map of LBRuT identifying key habitats, known features (e.g. bat roosts), good/poor connectivity, light pollution etc.	2019	Working Groups	LA, TLS
GA09 – Ensure that all planning applications are accompanied with appropriate information as requested by the LBRuT validation checklist.	Ongoing	LA	Working groups
GA10 – Require mitigation for increased urban surfaces in any development: green roof, green wall etc. to offset increased urbanization.	Ongoing	LA	Working groups

Specific actions targeting pollinators			
Action	Target date	Lead	Other partners
PS01 – Carry out a review of existing local policies (LBRuT Local Plan & Nature Conservation Policy).	2019	LA	ET, RBGK
PS02 – Where required after PS01, recommend policy changes to strengthen pollinator habitat within local policy	2020 and as required	LA	SWLEN



PS03 – Within the planning process ensure greenspaces in new developments are made pollinator friendly	Ongoing	LA	
PS04 – Review existing habitat mapping to identify key pollinator habitats present in LBRuT and the gaps.	2020	SWLEN, LA	
PS05 – Survey habitats, including brownfield, parks, verges etc. to assess their importance for pollinators.	2020	SWLEN, LA	
PS06 – Recognise and capitalise on opportunities to create pollinator friendly habitats as part of all appropriate new development.	Ongoing	LA	
PS07 – Use Section 106 & CIL agreements to ensure any local landscaping projects are pollinator friendly.	Ongoing	LA	
PS08 – Identify and liaise with landowners of roundabouts and verges to discuss mowing regimes can be improved to benefit pollinators.	2020	LA	
PS09 – Identify and set-up trial location to implement new mowing regime as a case study.	2020	LA	
PS10 – Encourage public use of 'bee and bug hotels' in private gardens.	2019	SWLEN, ET	
PS11 – Review Council use of pesticides (if used) and make recommendations.	2020	LA	
PS12 – Work with local landowners to develop a balanced approach to landscape management to benefit pollinators.	Ongoing	LA	
PS13 – Increase the coverage of pollinator habitat by 2% per year, such as through the creation of B Lines.	Ongoing	LA	
PS14 – Through public communication, encourage the reduction of pesticide use or other landowners and in private gardens.	2020	SWLEN, ET	LA
PS15 Raise awareness of and promote the creation of pollinator friendly features.	Ongoing	SWLEN, ET	
PS16 To celebrate and promote National Pollinator Week through comms and social media.	Annual	SWLEN, LA	
PS17 Advise landowners of appropriate management for their existing and new meadows.	Ongoing	LA, SWLEN	



7. References

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9.Abbreviations

BCT: Bat Conservation Trust	LEAP: Local Environment Agency Plans
DEFRA: Department for Environment, Food	LNHS: London Natural History Society
and Rural Affairs	LTWGS: London Tree and Woodland Grant
EA: Environment Agency	Scheme
FC: Forestry Commission	LWT: London Wildlife Trust
FG: Friends Groups	NE: Natural England
FORCE: Friends of the River Crane	RBGK- Royal Botanic Gardens Kew
Environment	RBP: Richmond Biodiversity Partnership
GA: Generic actions	SWLEN: South West London Environment
GIGL: Greenspace Information for Greater	Network
London	TCV: The Conservation Volunteers
GLA: Greater London Authority	TLS: Thames Landscape Strategy
HRP: Historic Royal Palaces	TRP: The Royal Parks
LA: Local Authority (LBRuT)	WLO: Wildlife Liaison Officer (Metropolitan
LBG: London Bat Group	Police)
LBRuT: London Borough of Richmond upon	WWT: Wildfowl and Wetlands Trust
Thames	

8. Contact

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Glossary

This glossary defines the main terms used throughout this Biodiversity Action Plan.

Abstraction

The removal of water from a river or stream or other source.

Accretion

Growth or increase by the gradual accumulation of additional layers or matter.

Agenda 21

An action plan that was agreed as part of the International Agreement on Sustainable Development at the Rio Earth Summit in 1992, which sets out direct action to improve the quality of lives and safeguard the environment by aiming to halt the extinction of the world's biodiversity.

Anthropogenic

Originating in human activity.

Amenity Grassland

Grassland that improves the quality of an area by contributing to the physical or material comfort of users such as places to picnic, walk, engage in leisure pursuits etc, as well as increasing the attractiveness or value of a location.

Anoxic

Absence of oxygen.

Arboriculture

The selection, planting and management of individual trees, shrubs, vines and other woody plants in the urban environment.

Backland

Land located within the floodplain of a river, associated with a backwater.

Backwater

A channel connected to a river system, sometimes only at high water.

Baseline

A defined condition for a site, habitat or species against which any future changes in the condition of the site, habitat or species can be monitored, and the significance of this change in conservation terms, assessed, so that management can be altered to maintain or enhance the site, habitat or species.

Basin

A region drained by a single river system.

Benthic

Of, or relating to the bed of a river e.g. animals living on the riverbed.

Biochemical Oxygen Demand (BOD)

A measure of the amount of organic material present in water.

Biodiversity

Biodiversity or biological diversity is the variety of life in all its different forms, which includes the myriad of plant and animal species and the range of habitats in which they live.

Biodiversity Action Plan

A Biodiversity Action Plan (BAP) is an evolving strategy and delivery mechanism for the conservation of biological diversity and the sustainable use of biological resources. It is a plan that sets objectives and actions for the conservation of biodiversity, with measurable targets.



Brackish

Slighty salty conditions, as found in a river estuary.

Brownfield

Any land which has previously been used or developed but is not currently in full use, although it may be partially occupied or utilised. The land may also be vacant, derelict or contaminated, but excludes parks, recreation grounds, allotments and land where the remains of previous use have blended into the landscape, or have been overtaken by nature conservation value or amenity use and cannot be regarded as requiring redevelopment.

Bryophyte

A major group of plants that includes mosses and liverworts.

Calcifuge

A plant not suited to calcareous soil.

Colonisation

Successful invasion of a new habitat by a species; the occupation of bare ground by soil by seedlings or sporelings.

Colony

A group of the same kind of animals, plants, or one-celled organisms living or growing together.

Community

An identifiable and distinct grouping of organisms occurring together in a particular area that interacts with each other and with their shared environment.

Conservation

The protection, management and enhancement of the environment to sustain and improve the diversity of wildlife in an area.

Coppicing

A management technique used to harvest timber by periodically cutting trees to ground level, to stimulate regrowth.

Cultivars

A plant variety that has been produced in cultivation by selective breeding.

Deciduous

Plants that loose or shed their leaves/foliage at the end of the growing season, such as deciduous trees.

Defoliate

To strip (a tree, bush, etc.) of leaves.

Distribution

Geographical range of a taxon or group: the pattern or arrangement of the members of a population or group.

Dioecious

(of a plant or invertebrate animal) having male and female reproductive organs in separate individuals.

Ecology

The study of living things in relation to their environment.

Ecosystem

A community of interdependent organisms and the environment in which they live and interact.



Ecotype

Composition of habitats, affecting conditions in micro-habitats.

Entomological

Relating to the study of insects.

Erosion

Weathering away; the removal of land surface by water, ice, wind or other agents.

Eutrophication

The over-enrichment of an aquatic habitat with inorganic nutrients, such as phosphates and nitrates, which typically occurs from sewage discharge or fertilizer run-off, resulting in an imbalance in the ecosystem.

Extant

Still existing or present, as opposed to extinct.

Fauna

It is the term used to describe all the animal life of a particular area or period.

Flagship Species

They are special plants and animals that are associated with good management of a particular habitat as well as being characteristic of that habitat. It is also a species perceived favourably by the public for reasons of aesthetics or other value, used to promote and publicise habitat conservation.

Flocculation

The propensity of things to move together in a mass or clump e.g. in a river organic material sticking together, which may then settle on the bed.

Floodplain

An area of low-lying ground adjacent to a river, formed mainly of river sediments and subject to flooding.

Flora

Term used to describe all the plant life of a particular area or period.

Genetic

Relating to genes i.e. the hereditary material.

Geomorphology

The study of the physical features of the surface of the earth and their relation to its geological structures.

Germination

The development of a plant from a seed or spore after a period of dormancy.

Green Corridor

Linear sequence of connected greenspaces, allowing migration of species between areas. Often consisting of railway embankments and cuttings, roadside verges, canals, parks, playing fields and rivers.

Habitat

The natural environment where a particular animal or plant lives. The term is often used in the wider sense, referring to major assemblages of plants and animals found together, such as woodlands, wetlands or grasslands.

Habitat Action Plan (HAP)

A targeted programme of management measures aimed at maintaining, enhancing or restoring a



specific habitat. Habitat Action Plan's identify a number of conservation objectives and specify actions for targeting the habitat and detail the responsibilities for achieving those objectives.

Habitat Creation

Specific site management to try and create a habitat on a site where it has not occurred before.

Habitat Heterogeneity

Variety of conditions with a habitat type.

Habitat Restoration or Recreation

Specific site management to try and restore or recreate a habitat on a site where it has once or had previously existed, but has subsequently been lost.

Hibernaculum

The winter quarters of a hibernating animal.

Hybridize

Cross-breed (individuals of two different species or varieties).

Inflorescence

The complete flower head of a plant.

Invertebrates

Animals that do not have a backbone or spinal column e.g. insects.

Larvae

The newly hatched, wingless, often wormlike form of many insects before metamorphosis.

Local Agenda 21 (LA21)

A partnership of organisations, communities and individuals, which works from 'the bottom up' on a local level to achieve sustainable patterns of development in all aspects of life.

Local Development Frameworks (LDFs)

Replace Structure Plans and Local Plans, as a result of the Planning and Compulsory Purchase Act 2004, which came into force in September 2004. This has resulted in major changes to the planning system.

Local Nature Reserve (LNR)

An area of land that is of special conservation interest and is of importance to both people and wildlife on a local level. LNR's are declared and managed by the owner of the site under the National Parks and Access to the Countryside Act 1949.

Management

The maintenance of a site in order to conserve and enhance its habitats and range of species, using various tools and techniques such as mowing.

Marginal Habitats

Habitats located at, or constituting, a margin, border or edge.

Metropolitan Open Land (MOL)

Designation intended to protect areas of landscape, recreation, nature conservation and scientific interest which are strategically important. Any alterations to the boundary of MOL should be undertaken by Boroughs through the Local Development Framework process, in consultation with the Mayor and adjoining authorities.

Monitoring

A process of repeated observations to record, test and control one or more elements within the environment such as the population of a species. Monitoring provides factual information concerning the present status and past trends in environmental parameters. Monitoring the priority



habitats and species contained within a BAP will allow the assessment of how successful the BAP is in protecting and enhancing biodiversity.

Monophagic

Eating only one kind of food.

Moribund site

Site in terminal decline; lacking vitality or vigour.

Mycorrhizal Fungi

Fungi associated with the roots of plants in a mutually beneficial relationship.

National Nature Reserve

Nature reserves designated by English Nature under the 1949 National Parks and Access to the Countryside Act.

Native Species

A species that occurs and belongs naturally to an area that has not been introduced by man.

Non-native Species

A species that does not occur or belong naturally to an area, but has become established and generates successfully in the new environment e.g. Japanese Knotweed.

Non-Tidal

That part of a river which is not affected by the changing tide. In the case of the Thames, it is generally considered to be non-tidal upstream of Teddington Lock.

Organism

An individual animal, plant or single-celled life form.

Ornithology

A branch of zoology: the study of birds.

Parasitic

An organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host.

Pesticide

Any chemical or biological agent that kills plant or animal pests: herbicides, insecticides, fungicides, rodenticides, etc are all pesticides.

Plant Communities

A group of plants living and interacting with one another in a specific region under relatively similar environmental conditions.

Protected Species

Certain plant and animal species such as bats are protected to various degrees in law, particularly under the Wildlife and Countryside Act 1981 (as amended).

Range

The geographic region in which a plant or animal normally lives or grows.

Red Data Book

These are species that are endangered, rare or vulnerable to extinction globally, nationally or locally, and are contained within catalogues that are published by the International Union for the Conservation of Nature (IUCN).

Reintroduction

The release and establishment of a species to an area within its natural range and environment but where it has been lost or has previously become extinct.



Riparian

Relating to the bank of a river or stream.

Rodenticides

Substances that are used to destroy or inhibit the action of rats, mice, or other rodents.

Run-off

The build up of water occurring at ground surface level at times when rainfall cannot be absorbed by the soil, which particularly occurs in urban areas where the ground is covered by concrete and other non-permeable materials.

Salinity

The saltiness or content of salt in a solution.

Saproxylic invertebrates

Invertebrates that are dependent on dead or decaying wood.

Scrub

Low growing woody species, of less than tree height, which occurs usually as a transitional stage in the succession from grassland to woodland.

Site of Borough Importance for Nature Conservation

Sites which are important in a Borough perspective; damage to these sites would mean a significant loss to the Borough.

Site of Local Importance for Nature Conservation

Sites that are or may be of particular value to nearby residents or schools. Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

Site of Metropolitan Importance for Nature Conservation

Those sites which contain the best examples of London's habitats, sites with rare species, rare assemblages of species, or which are of particular significance within large areas of otherwise built-up London, which are afforded the highest priority for protection.

Site of Special Scientific Interest (SSSI)

A site which is of national biological or geological importance, as defined by the Wildlife and Countryside Act 1981 (as amended), which is notified by a statutory conservation organisation i.e. English Nature.

(European) Special Area of Conservation (SAC)

A site which is of European importance for wildlife, designated under the Habitats Directive by the UK Government where the necessary management is applied to maintain or restore the habitats and/or species for which the site has been designated.

Species

A group of living organisms capable of interbreeding.

Species Action Plan (SAP)

A targeted programme of measures and actions aimed at maintaining and enhancing a specific species. Species Action Plan's identify a number of conservation objectives and specify actions for targeting the species to stabilise and improve its status as well as detail the responsibilities for achieving those objectives, based upon knowledge of its ecological and other requirements.

Spring Tides

These occur a week after the full moon, which is on average 1-2 a month and not just during the spring months.

Succession

The sequential development of plant or animal communities through time.



Survey

To undertake an inventory and look at and examine the attributes and condition of a site, area or region usually in terms of the quality and presence of the habitats and species.

Sustainable Development

To use natural resources in a sustainable manner so development can meet the needs of the present without compromising the ability and needs of future generations. Biodiversity and sustainable development are inextricably linked, as the wealth of species and habitats are an indicator of our environment and general well-being.

SuDS (Sustainable Drainage Systems)

SuDS are concerned primarily with the drainage of rainwater from developed or urbanised areas, often involving the concept of rainwater re-use. SuDS is a concept that focuses on decisions about drainage on the environment and people.

Sward

The grassy surface of an area of land.

Таха

A defined group of organisms.

Thermocline

A temperature gradient in a water body.

Tidal

Relating to or affected by tides. The tidal section of a river is that part which is subject to a twice daily fluctuation in level, in response to the changing tide.

Translocation

The removal of things from one place to another: substitution of one thing for another.

Topography

The arrangement of the natural and artificial physical features of an area.

Vernacular

Commonly spoken by the people of a particular country or place

Wetland

Any habitat that is characterised by standing or flowing water for part of the year.

Wet woodlands

Woodland occurring on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including ash, oak, pine and beech on drier riparian areas. Wet woodlands are often found on floodplains.

