Harrow Biodiversity Action Plan 2015 – 2020

Moving forward: stepping stones and nature networks

Harrow COUNCIL
LONDON

Contents

Foreword

Here in Harrow we are fortunate as this is one of greenest boroughs in Greater London. There are more than 500 hectares of greenspaces and a range of habitats and sites many of which are important ecological resources. Within the borough there are 79 formal open spaces including parks, gardens, allotments and burial grounds as well as 28 more natural areas of woodland and grassland.

Our greenspaces include areas of regionally and nationally important habitats such as species-rich grassland and ancient woodland. Some Green Belt agricultural land to the north of the borough is fringed with hedges and ditches which have changed little since Medieval times. Our borough is home to an array of wildlife including some less common animal and plant species like the stag beetle, southern wood-ant, heath spotted-orchid and coralroot.

Many of our more biodiverse areas are in the Green Belt to the north of the borough but there are also wildlife-rich sites within more built-up areas of Harrow This plan embraces the concept of networking all the borough's sites of biodiversity value linking town and countryside. It seeks to improve and enrich the wildlife value of the urban environment.

This Biodiversity Action Plan is about more than protecting our wildlife. Providing a network of quality biodiverse greenspaces contributes to our own health, wellbeing and economic prosperity as well as ensuring that we are well placed to adapt in the face of climate change. Our quality of life is also improved as greenspaces offer us opportunities for recreation, education and contemplation.

The Council is a major landowner in Harrow and has a role in community leadership. It has a responsibility to conserve, protect and enhance our natural habitats and leave a lasting legacy for future generations. However, we should all be involved in the protection and enhancement of the natural environment in whatever way we can. This Biodiversity Action Plan highlights our commitment to the conservation of biodiversity. Going forward it points the way and facilitates actions that we will integrate into our programmes, policies, plans and strategies.

Keith Ferry
Portfolio Holder for Planning and Regeneration

Executive Summary

Harrow is in a strategic position regarding nature conservation. As an outer London borough it bridges town and countryside. To the north of the borough nature reserves and other wildlife sites in the Green Belt act as wildlife reservoirs. In the more built-up areas further south it is a matrix of relatively wildlife-rich open spaces including parks, cemeteries, nature reserves and gardens. A number of these wildlife sites are 'islands' of biodiversity in a sea of urbanisation, species-poor grassland or agricultural fields.

Spanning the wildlife sites of the Green Belt are fields with medieval hedges at their boundaries as well as lines of trees, streams and ditches - these are conduits for wildlife. In more built-up areas a number of sites are linked by streams, railway cuttings and mature gardens. Features such as these allow plants and animals to 'move' from site to site and link with the wider Hertfordshire countryside. More mobile wildlife can also 'hop' between suitable nearby sites using them as 'stepping stones'.

Together, these sites and the linkages between them form 'nature networks' which will help wildlife to adapt in the face of climate change, and migrate from site to site across towns and countryside.

The quality of nature networks is crucial no matter where we live. Important sites, habitats and features need to be protected and wildlife encouraged wherever possible. New links need to be forged particularly between the Green Belt and urban areas. Additionally habitat improvements are possible regarding some wildlife sites thus raising their nature conservation importance. This will provide an opportunity for wildlife to flourish and for people to experience a stimulating recreational experience wherever they are in the borough.

To meet this challenge Harrow Council believes that the conservation and enhancement of the natural environment and biodiversity is important for a number of reasons:

- To meet legal commitments under the Natural Environment and Rural Communities Act 2006.
- For health and wellbeing
- Helps to regulate the local environment
- Helps to impart a sense of place and community pride
- To provide an education and engagement resource

The Biodiversity Action Plan (BAP) covers 5 themes:

1. The Natural Environment and Ecosystems Services
2. Green Belt Woodland and the Urban Forest
3. The Built Environment
4. Climate Change and Sustainability
5. Engaging with Nature

The BAP will guide Harrow Council and its partners in conserving the natural environment and its flora and fauna. Actions in the BAP are classified thus:

1. *Operational*, addressing current management of habitats, flora and fauna
2. *Planning*, supports spatial policies or addresses development management
3. *Resources dependent*, setting actions for increasing habitats and species in Harrow. Included are aspirational targets for long-term increase of natural habitat and species in line with national and regional targets

Implementing the BAP will deliver significant outcomes and result in benefits for Harrow:

- Better nature reserves, open spaces and safer parks
- More educational opportunities through events and training
- Increased opportunities for a healthy lifestyle and improved wellbeing through promotion of walks and volunteering activities
- Greening the borough through habitat management and creation
- More cultural and leisure opportunities
- Improved environmental management
- Heightened awareness of wildlife and conservation
- New or improved habitats/niches for populations of rare or otherwise notable species
- Increased sustainability of the built environment through wildlife friendly landscaping, green roofs and SuDS schemes
- Meet requirements from the EU, National and Regional legislation for flood risk management, water quality and water environment as laid out in the Flood & Water Management Act and Flood Risk Regulations

This BAP has been developed in line with national and regional policies on biodiversity and gives effect to the relevant objectives of Harrow's Sustainable Community Strategy and the Local Plan[1]. The BAP will be delivered by Harrow Council together with partner organisations in Harrow including land owners and managers as well voluntary organisations and biodiversity experts and the wider community. Partners and community groups manage Harrow's Local Nature Reserves (LNRs) and a number of other Sites of Importance for Nature Conservation (SINCs). Progress will be reported through the Council's Rationalised Monitoring Schedule and the Government's Single Data List.

[1] Made up of the Harrow Core Strategy, Development Management Policies and Site Allocations Local Plan documents, and the Harrow & Wealdstone Area Action Plan.

Photo: brown hawker dragonfly *Aeshna grandis* – Seven Acre Lake – photo: Denis Vickers

Acknowledgements

The generic format of this Biodiversity Action Plan follows that adopted by Jon Best in producing a BAP for Southwark. The traditional use of Habitat Action Plans (HAPs) has been replaced with a series of themed actions intended to conserve and enhance biodiversity.

The front cover is reproduced from photographs appearing on the Harrow Nature Conservation Forum's Facebook pages https://www.facebook.com/harrowncf/photos_stream?ref=page_internal

All photographs used in this work are sourced in Harrow and where appropriate locations are given - photographers are credited individually.

Section 1: A new Biodiversity Action Plan

1. Introduction

This second Harrow Biodiversity Action Plan (BAP) outlines how Harrow Council together with its partners will work to conserve, enhance, and promote biodiversity in Harrow from 2015 to 2020. It will update and supersede the previous BAP produced by the Council in 2007 and operational from 2008 to 2013.

Following the Lawton Review 2010, '*making space for nature*', the Government published the Natural Environment White Paper '*Securing the value of nature*' 2011 and the Biodiversity 2020 strategy. This was underpinned by the UK National Ecosystem Assessment, 2011(now with subsequent follow-on phases 2013 & 2014).

The concept of 'ecosystems services' has broadened current thinking as to how we view and value biodiversity's rich contribution to every area of our lives. Conserving and enhancing biodiversity is essential to our wellbeing. Biodiversity contributes to our health, education and our economic prosperity. It provides us with food, water and materials. It allows us to adapt to and meet the challenges posed by climate change via the retention of water runoff and carbon sequestration. It offers quality green spaces for people to enjoy, places for recreation and contemplation.

The built environment provides opportunities to enhance biodiversity and may be viewed as a potentially important urban habitat and not just an obstacle to wildlife. New developments can incorporate living roofs, green walls and sustainable urban drainage systems (SuDS) as well as native and wildlife attracting landscaping which can be enhanced by making the water environment inclusive in urban design. Greening buildings in this way will also aid urban cooling and lessen the impacts of climate change. New developments and refurbished existing buildings often have no voids under the eaves, under tiles or in wall which render them sterile with regards to wildlife. Bird nesting bricks and bat roosting tubes can be fixed below eaves or integrated into walls to counter this. As incentive maximum sustainability ratings under the BREEAM, or Code for Sustainable Homes (CfSH), schemes are achievable for new developments which include biodiversity enhancements.

The Harrow BAP identifies the priorities for biodiversity in Harrow and sets out a programme of action to improve biodiversity value throughout the borough. The Plan brings together a series of actions under 5 main themes that encourage best practice, and ensure that policy and legislation are followed. Additionally opportunities are provided for Harrow residents to experience the natural environment.

The Plan has been developed with the input of key partner organisations in Harrow including land owners and managers as well voluntary organisation and biodiversity experts. This BAP builds on the previous Plan and has been

refined through ongoing consultation with key partners. As a result the Harrow BAP will focus on the following 5 themes:

1. The Wildlife and Ecosystems Services
2. Green Belt Woodland and the Urban Forest
3. The Built Environment
4. Climate Change and Sustainability
5. Engaging with Nature

Coralroot *Cardamine bulbifera,* Stanmore Common – photo: Denis Vickers

1.1 What is biodiversity?

Biodiversity is the variety of life on Earth - it includes all living things and the places where they live. Biodiversity provides us with food, resources, sources of inspiration, relaxation and education and much, much more.

1.2 Why a Biodiversity Action Plan for Harrow?

This BAP provides guidance on the protection, enhancement and promotion of the natural environment. A BAP is material consideration, where relevant, in planning application decisions. The BAP helps meet legal commitments and contributes to targets set in national and regional plans for conserving biodiversity. The Greater London Authority Act 1999 states that that the Mayor of London's Biodiversity Strategy is to *'have regard to any plans relating to biodiversity prepared by a London borough council….* The plan provides strategic direction for the departments responsible for the

management of parks, water environment including river corridors and water bodies, and open spaces, and other facets of the public realm as well as partner organisations. Indicators taken from the Core Strategy set a specific target for improving biodiversity of Sites of Importance for Nature Conservation (SINCs) over the duration of the Strategy (2012-2026). These are shown in the Table 1 below:

Table 1 Positive conservation management targets target for SINC sites

BIODIVERSITY					
Objective Number	**Indicator Number**	**Indicator**	**Target**	**Trigger**	**Action/Contingency**
Strategic Objective 1	BIO2	Sites of importance for nature conservation where positive conservation management has been or is being implemented	80% of SINCs where positive conservation management has been or is being implemented	Less than 60% by 2016/17	Review reason why positive conservation management is not being implemented
CS3 Strategic Objective 2				Less than 70% by 2021/22	Consider options to incentivise private landowners
CS6 Strategic Objective 2					Review policies and amend if necessary to strengthen protection
				No increase in the number of SINCs in positive conservation management over a rolling three year period	Review Biodiversity Action Plan and update if necessary

Table 2 BAP background and hierarchy

BAP background & hierarchy	
UK BAP	The UK BAP 'Working with the grain of Nature' 2002 was developed by the Government in response to the 1992 Convention on Biological Diversity. The UK BAP identifies priority habitats and species for conservation across the UK.
London BAP	The UK BAP identifies priority habitats and species for conservation across the UK. London BAP The London BAP '*Connecting with London's Nature*' 2002, was coordinated by the London Biodiversity Partnership. The plan focuses on national priority habitats and species and includes regional priorities.
Harrow BAP	Harrow BAP The Harrow BAP focuses 5 themes and includes actions for national and regional habitats and species present in the Borough. The Harrow BAP is a tool kit to help deliver a program of actions to improve biodiversity in Harrow.
Other BAPs	BAPs of neighbouring boroughs and key partners are also important.

1.3 What this plan contributes to in Harrow

This BAP delivers biodiversity targets in accordance with national, regional and local policies and strategies. The list below indicates the Plan's contribution to service delivery in the following areas:

- A material consideration, where relevant, in the determination of planning applications including the implementation of relevant planning policies and site allocations
- Contributes to Development Management Policies for environment
- Contributes to the delivery of the Open Spaces Strategy policies on biodiversity
- SINC management plans
- Contributes to education and life-long learning

This BAP will deliver significant outcomes and result in benefits for Harrow:

- More educational opportunities through events and training

- Better health and wellbeing through promotion of walks and volunteering activities
- A greener borough through habitat management and creation
- More cultural and leisure opportunities
- Improved environmental management
- Increased and improved awareness of wildlife and conservation
- Increased numbers of individuals in population of rare or notable species
- Improved building sustainability and built environment via living roofs and SuDS and protection of river corridors and water bodies

The BAP will guide and support the following aspects of ecological management provided by Harrow Council.

- Support the assessment of planning applications and advise on appropriate mitigation and ecological enhancement as required
- Maintain a database of species and habitats in Harrow
- Contribute to continuous improvement of council service delivery.
- Provide performance scrutiny through annual review of the BAP
- Improve management through production of management plans for all the borough's SINCs
- Improve the management of valuable habitats and sites in the borough through increased awareness of current best practice (gained in part through engagement with appropriate partners) and through the development of evidence-based management plans
- Support planning policy in protecting and enhancing Sites of Importance for Nature Conservation (SINCs).

Mating common toads *Bufo bufo* – Photo: John Winter

Section 2: Policy, Legislation and Biodiversity

2. Biodiversity Policy and Legislation

Harrow Council has a number of statutory obligations in relation to biodiversity policy and legislation (in common with all Local Authorities). As a public body, Harrow Council must comply with the 'Biodiversity Duty' as set out in the Natural Environment and Rural Communities Act 2006, (NERC). This means that biodiversity must be considered in all aspects of how the Council functions.

The Biodiversity Duty: *Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.*

Responsibilities and contributions
Under the relevant council Portfolio Holders, the following departments or sections contribute (or have contributed) to this plan (Table 3 below).

Table 3: Department/Section Responsibility Contribution to the BAP

Department/Team	Responsibility	Contribution to BAP
Harrow Pride	Management of parks and open space and trees in the borough	Plans and delivers habitat management and enhancement ensuring protection of species and promotion of biodiversity
Planning Policy	Production of spatial planning documents and supporting evidence base	Development of biodiversity policy in planning documents
Development Management	Management of development through planning applications	Scrutiny of planning applications and conditioning of mitigation or ecological enhancement
Housing	Management of the housing	Delivers habitat management on housing land

Climate Change (now defunct)	Production of climate change strategy	Delivers plans for air quality and energy efficiency. Promotes sustainable services such as recycling
Traffic, Highways & Asset Management	Is the Lead Local Flood Authority, regarding Strategic Flood Risk Assessment. Is responsible for Council owned tree stock	Facilitates and delivers plans for sustainable urban drainage schemes. Is responsible for producing a Tree Strategy for the borough

Biodiversity legislation and policies relevant to Harrow

European:

- Regulation of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species (Regulation will come into force on 1 January 2015)
- The Conservation of Habitats and Species Regulations 2010
- EU Floods Directive 2009
- Water Framework Directive 2000

National:

- Natural Environment and Rural Communities Act 2006
- National Planning Policy Framework 2011
- DCLG, The National Planning Policy Framework, Planning Practice Guidance - Natural Environment: Biodiversity, ecosystems and green infrastructure
- Wildlife and Countryside Act 1981 (as amended)
- Countryside and Rights of Way Act 2000
- The Natural Environment White Paper 2011
- England's Wildlife and Ecosystems Services Strategy 2011
- Working with the grain of nature, The UK BAP
- The Greater London Authority Act 1999
- Flood & Water Management Act 2010
- Flood Risk Regulations 2009
- River Basin Management Plan 2014

Regional:

The London Plan Policies

- 2.18 Green infrastructure
- 5.3 Sustainable design and construction

- 5.10 Urban greening
- 5.11 Green roofs and development site environs
- 5.13 Sustainable drainage
- 7.18 Protecting public open space and addressing deficiency
- 7.19 Biodiversity and access to nature
- 7.21 Trees and woodlands
- 7.22 Land for food
- 7.28 Restoration of the Blue Ribbon Network

Other London and sub-regional strategies/policies

- Sustainable Design and Construction (SPG) 2014
- The All London Green Grid, Supplementary Planning Guidance (SPG) 2012
- Connecting with London's nature: The Mayor's Biodiversity Strategy 2002
- Connecting Londoners with Trees and Woodlands: A Tree and Woodland Framework for London 2005
- Green Infrastructure & Open Environments: Preparing Borough Tree and Woodland Strategies (SPG) 2013
- Brent River Corridor Improvement Plan. The Brent Catchment Partnership (April) 2014
- The Crane Valley: A Water Framework Directive Catchment Plan. The Crane Valley Partnership, 2013

Local:

Harrow Core Strategy 2012

The Core Strategy sits at the heart of the Local Plan and sets out the spatial vision and strategic objectives for Harrow's development for the period 2009 to 2026. The spatial vision is underpinned by the principle of protecting Harrow's suburban and environmental characteristics whilst sustainably accommodating objectively assessed development needs. The following Core Strategy strategic objectives are relevant to this BAP:

- **Strategic Objective 1**: Protect the historical and environmental features that contribute to Harrow's character and distinctiveness as a place to live, work and visit by: protecting the Green Belt, Metropolitan Open Land and Areas of Special Character; preserving the Metroland and suburban character of Harrow including gardens and tree management; preserving the quality and function of the natural environment.

- **Strategic Objective 2**: Enhance the infrastructure, environment and other resources which make Harrow a desirable place to live, work and visit by: ensuring that growth is matched by enhancements to social and physical infrastructure, including education, health care, recreation and cultural facilities; maintaining open space to provide a multi-functional and inter-

connected resource; enhancing community access to and better use of open space, sport and recreation facilities.

- **Strategic Objective 3**: Manage the Borough's contribution to climate change and increase resilience to flooding by: achieving sustainable design and construction in all new development; directing development away from areas of high flood risk and increase natural and sustainable drainage; improving air quality.

- **Strategic Objective 4**: Adapt to population and demographic changes to meet people's needs and quality of life by: promoting walking, cycling and participation in sport by all ages.

This BAP is relevant to the following Core Strategy policies:

- CS1(F) (*Overarching Policy – Open Space, Sport and Recreation*)
- CS1(AA) (*Overarching Policy – Required Infrastructure*)
- CS3(B) (*Harrow on the Hill and Sudbury Hill*)
- CS4(E) (*South Harrow*)
- CS6(B) & (G) (*Pinner and Hatch End*)
- CS7(H) (*Stanmore and Harrow Weald*)
- CS8(H) (*Edgware and Burnt Oak*)
- CS9(E) (*Kingsbury and Queensbury*)

Harrow and Wealdstone Area Action Plan (2013)

Following on from the Core Strategy, which identifies an area for intensification at the centre of the borough (the 'Harrow & Wealdstone Intensification Area'), the Area Action Plan (AAP) sets out a specific vision, objectives and policies for the sustainable development of the Intensification Area. The AAP acknowledges that there are challenges concerning the existing provision of green infrastructure and the environmental quality of the Intensification Area, and that climate change impacts will also need to be addressed[2]. However it also recognises the opportunity presented by development and investment to secure environmental and infrastructure enhancements, as well as to build-in resilience to/mitigation of climate change impacts.

The BAP is relevant to the following AAP policies:

- AAP9(D) (*Flood Risk and Sustainable Drainage*)
- AAP11(F) (*Provision of Open Space*)
- AAP12 (*Improving Access to Nature*)

Amongst others, policies DM18, DM20, DM21 and DM22 of the Development Management Policies Local Plan document also apply (where relevant) to development proposals within the Intensification Area.

[2] See paragraphs 2.33 and 2.34 of the AAP.

Development Management Policies Local Plan document (2013)

The Development Management Policies Local Plan document sets out policies for the assessment of planning applications throughout the wider borough. The BAP is relevant to the following policies:

- DM 9 Managing Flood Risk
- DM 10 On Site Water Management and Surface Water Attenuation
- DM 11 Protection and Enhancement of River Corridors and Watercourses
- DM12(A) (*Sustainable Design and Layout*)
- DM17(A) (*Beneficial Use of the Green Belt and Metropolitan Open Land*)
- DM18(B) & (C) (*Protection of Open Space*)
- DM19(A) & (B) (*Provision of New Open Space*)
- DM20 (*Protection of Biodiversity and Access to Nature*)
- DM21 (*Enhancement of Biodiversity and Access to Nature*)
- DM22(B) (*Trees and Landscaping*)
- DM27(B) (*Amenity Space*)
- DM48(A) (*Enhancing Outdoor Sport Facilities*)
- DM49(A) (*Telecommunications*)
- DM50 (*Planning Obligations*)

Site Allocations Local Plan document (2013)

Sites for residential and other forms of development, to sustainably accommodate the borough's objectively assessed development needs, are allocated in the Area Action Plan (for the Harrow and Wealdstone Intensification Area) and in the Site Allocations Local Plan document (for the rest of the borough). As planning applications for these sites are submitted, their impact upon and contribution to biodiversity will be assessed in accordance with the policies, where relevant, that is identified above.

Some allocated sites include specific provisions in relation to Sites of Importance for Nature Conservation or other identified biodiversity considerations. This BAP will be particularly germane to the formulation of development proposals for these sites.

In addition to identifying sites for development, the document identified opportunities for new major open space sites. The BAP is particularly relevant to the following sites which have been identified as potentially providing publicly accessible natural and semi-natural green space:

- MOS2 (*Harrow Weald Park, Brookshill, Harrow Weald*)
- MOS3 (*Glenthorne, Common Road, Stanmore*)
- MOS4 (*The Santway, Clamp Hill, Stanmore*)

Chapter 7 of the document sets out revisions to pre-existing and new Sites of Importance for Nature Conservation that had been identified in Harrow's first

BAP and in partnership with Greenspace Information for Greater London. These revisions/new sites are now adopted and are shown on the Policies Map that accompanies Core, Strategy, AAP and other Local Plan documents.

Other Harrow strategies/policies

- Harrow's Sustainable Community Strategy 2009
- Harrow Open Space Strategy 2011
- Climate Change Strategy April 2013 Onwards: Post Consultation Draft February 2013
- Tree Strategy 2014 – 2018 Draft May 2014

Great Crested Newt *Triturus cristatus* – Photo: John Dobson

2.1 Biodiversity in Harrow

Harrow has a diverse range of greenspaces many of which are important ecological resources, these include[3]:

28 Parks and gardens 195.2 ha
28 Natural and semi-natural greenspace 225.8 ha
18 Green corridors 15.0 ha
37 Allotments 36.1 ha
14 Churchyards and cemeteries 43.5 ha

[3] London Borough of Harrow Open Space PPG17 Study

Additionally there are 446 ha of agricultural fields to the north of the borough and 163.5 ha of sports fields throughout Harrow. Of all these greenspaces 44 are designated Sites of Importance for Nature Conservation (SINCs) – see Table 4 and Figure 1. These include Bentley Priory Open Space - a Site of Special Scientific Interest (SSSI), Stanmore Common and Stanmore Country Park. All 3 of these sites are Local Nature Reserves (LNR's). Harrow Nature Conservation Forum (HNCF), a dedicated team of volunteers, has involvement in the management of all 3 sites in partnership with Harrow Council. HNCF also manage several other sites in the borough including Pear Wood and Heriot's Wood (within Bentley Priory Open Space), which are the largest areas of ancient woodland in the borough.

There are approximately 80kms of watercourse in Harrow, 13 flood storage areas all of which are in open spaces that provide a blue element to our green amenity spaces. There are also 2 open water reservoirs, 7 Acre Lake and Summerhouse Lake and 1 dry impounding reservoir at Pinner Park Farm.

Harrow is home to important populations of regionally and nationally scarce habitats and species. Ancient woodland, acid grassland, species-rich neutral grassland, sphagnum bog, heath spotted orchids, southern wood-ants, stag beetles, great crested newts and a variety of bats are all found in Harrow.

Table 4: Sites of Importance for Nature Conservation (SINCs)

Map ID	SINC Name	SINC Grade	Reason for SINC designation (BAP)	Owned By	Managed By	Area ha
1	Wood End Railway Crossing & Roxeth Park	1	Railway cutting with a good variety of high quality wildlife habitats, including flower-rich grassland, and a park with fine old hedgerows and oaks	LBH (part) / TfL part/ Orley Farm School	LBH (part) / TfL part/ Orley Farm School	10.03
2	Pinnerwood Park and Ponds	1	Neutral & acid grassland (some wet) ponds, ditches, hedgerows with trees, woodlands with ancient elements & tall herbs	Pinner Hill Golf Club	Pinner Hill Golf Club	56.51
3	Harrow on the Hill	1	Acid and neutral grassland, woodland (possibly ancient) lake, stream, scrub, scattered trees	LBH /Harrow School	LBH /Harrow School	71.90
-5	Stanmore Marsh	2	Broad- leaved woodland, scrub, tall herbs, semi-improved grassland and stream	LBH	LBH	3.93
6	Canons Park and Stanmore Railway	2	Broad- leaved woodland, scrub, vegetated walls, tall herbs, improved and grassland	LBH (part) / TfL (part)	LBH (part) / TfL (part)	31.60
7	Rayners Lane Railside Lands	2	Scrub, rough grassland	TfL	TfL	3.86
8	Yeading Brook	2	River, amenity and rough grassland, scrub and woodland	LBH	Crane Valley Partnership/LWT	10.10
9	Headstone Manor Recreation Ground	2	Woodland (probably ancient) river, hedgerows, scrub, moat	LBH	LBH	2.11
10	Grim's Ditch at Pinner Green	2	Secondary woodland, scrub, rough grassland, hedgerow, ditch, old oaks	LBH	LBH	2.77

10	Wood Farm	2	Wasteland, tall herbs, neutral grassland, scrub, pond	?	?	21.25
11	Oxhey Lane Fields and Railway	2	Ancient field system with large hedgerows, semi-improved neutral grassland and localised low fen habitat	Unknown/TfL	Unknown/TfL	6.12
12	Canons Lake and The Basin	2	Broad-leaved woodland, stream, open water, marginal vegetation	Canons Park Estate Association	Canons Park Estate Association	6.87
13	Grims Dyke Farm	2	An extensive and well-preserved ancient field system with large hedgerows	LBH	Lessee - Council freehold	30.16
13	St Dominic's Sixth Form College	2	The grounds contain several features of value to wildlife, including an old orchard and a pond	R C Diocese of Westminster	School	2.29
14	The Grail Centre	2	The grounds of a religious retreat with a number of wildlife-friendly features	R C Diocese of Westminster	R C Diocese of Westminster	3.29
16	Orley Farm School Nature Conservation Area	L	Pond/lake, Secondary woodland, Semi-improved neutral grassland	Orley Farm Independent Preparatory School	School	1.79
17	River Pinn at Harrow West	L	River, woodland, scrub, hedges, tall herbs, grassland, vegetated walls	LBH	LBH	3.35
18	Newton Park and Newton Park Ec	L	Neutral grassland (some wet) river, woodland, scrub, hedges, ruderal, pond, gardens	LBH	LBH	5.40
19	The Rattler including Belmont	L	Woodland, scrub, rough and amenity grassland, scattered trees, hedges, ruderal	LBH	LBH	3.83
20	Old Tennis Court, West Harrow	L	Rough grassland, scrub scattered trees	LBH	LBH	0.46
21	Woodridings Brook	L	This stretch has varied habitats, including shallows and shingle banks. Adjacent habitats include a good range of trees and shrubs	LBH/Private		0.27
22	Paine's Lane Cemetery	L	Scattered trees, Scrub, Semi-improved neutral grassland	LBH	LBH	0.98
23	Pinner New Cemetery Footpath	L	An attractive footpath with an old hedge, beside Pinner New Cemetery	LBH	LBH	0.33
24	Grims Dyke at Saddlers Mead	L	A wooded section of the Grim's Dyke, on the edge of a recreation ground	LBH	LBH	0.39
25	Edgeware Brook at Whitchurch School	L	A meandering stream with wet grassland, and a nearby wooded ditch, provide wildlife habitats around the edges of sports fields	?	?	0.77
26	St John the Evengelist Churchyard, Stanmore Park	L	An attractive churchyard with a surprisingly rural character. Scattered trees, Scrub, Semi-improved neutral grassland, Vegetated wall/tombstones	Diocese of London		1.07
27	Woodlands Open Space Spinney and Melrose Allotments	L	A small wood, shady footpath and allotments, together providing a good range of wildlife habitats.	LBH	LBH	1.25
28	Harrow Arts Centre	L	Hedge, Running water, Scattered trees, Scrub, Semi-improved neutral grassland, Tall herbs	LBH		1.65
29	Harrow Weald Park and the Hermitage	2	Lake, acid and neutral grassland, scrub, woodland (some possible ancient), river, pond, scattered trees	LBH	LBH	29.01
30	Pinner Park Farm	1	River agricultural grassland, secondary woodland, hedgerows, scattered trees, ponds	LBH	Lessee - Council freehold	96.83

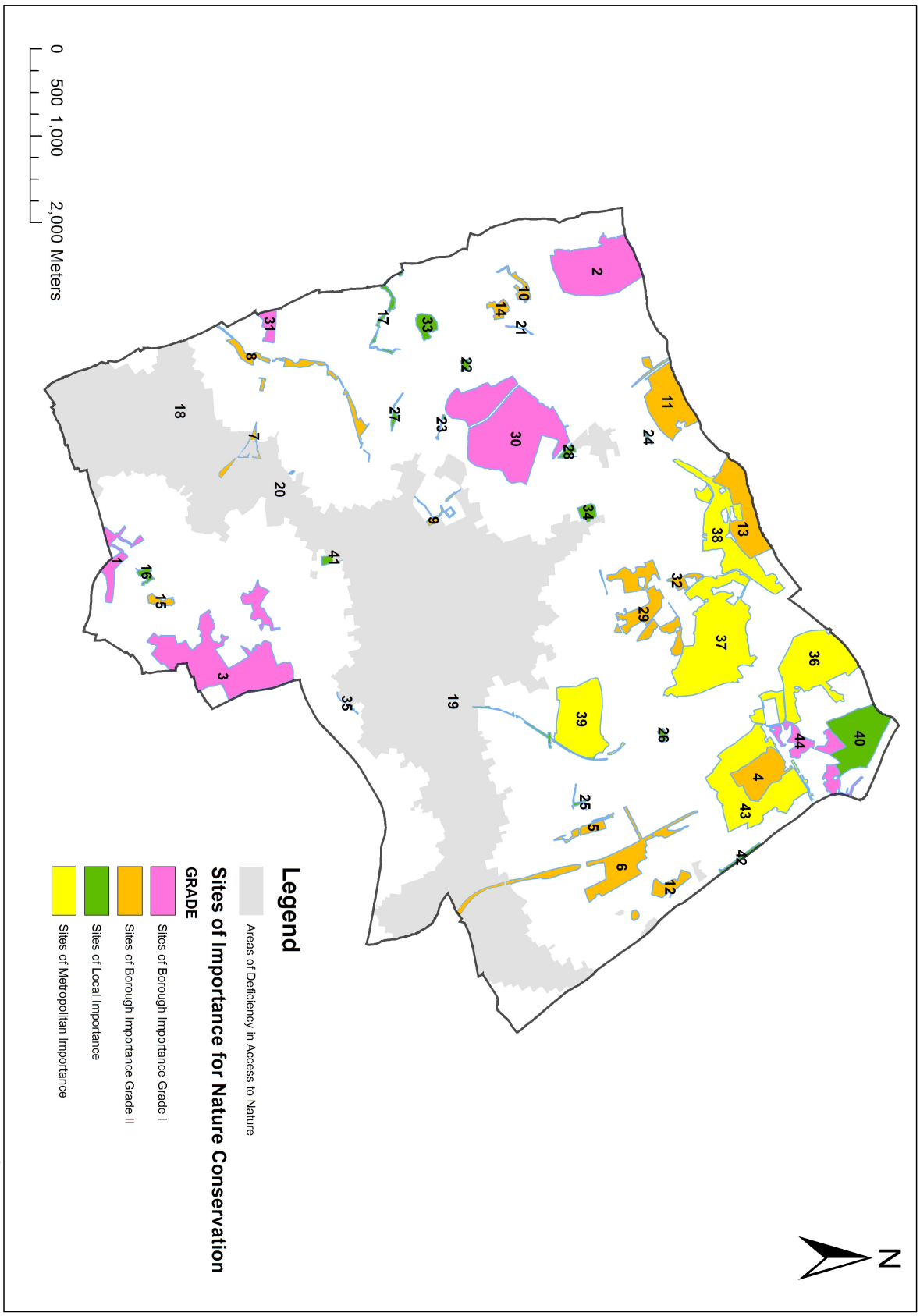
31	Roxbourne Rough Nature Reserve	1	Acid and neutral grassland (some wet), hedgerows with trees, scrub, woodland fragments, seasonal ponds	LBH	LBH/HNCF	4.91
32	Clamp Hill Brickfields	2	Pond, secondary woodland, scattered trees, amenity and rough grassland, tall herbs, scrub	Unknown (Private)	Unknown (Private)	3.14
33	Pinner Memorial Park	L	Rough and amenity grassland, scattered trees, pond hedges, gardens	LBH	LBH	5.06
34	The Cedars Open Space	L	Native and non native woodland, scrub, rough and amenity grassland, tall herbs scattered trees	LBH	LBH	3.13
35	Bonnersfield Lane	L	Hedges, old trees, scrub	Unknown	?	0.35
36	Stanmore and Little Commons	M	Heathland, acid grassland, secondary woodland, streams	LBH	LBH/HNCF	57.95
37	Bentley Priory Open Space	M	Neutral grassland, ancient woodland, scrub, standing water	LBH	BPNRMC/HNCF	83.71
38	Harrow Weald Common	M	Ancient and secondary woodland, heathland, standing water	No ownership	Harrow Weald Conservators/LBH	41.93
39	Stanmore Golf Course	M	Ancient and secondary woodland, hedges, neutral grassland	LBH	Lessee - Council freehold	41.56
40	Watling Chase planting site and environs	L	An area of rough grassland, planted with native trees as part of Watling Chase Community Forest.	LBH	LBH	34.34
41	Harrow Cemetery	L	Amenity and rough grassland, hedgerows, scattered trees, vegetated tombstones	LBH	LBH	2.54
42	Watling Street Verge	L	Ruderal, Scattered trees, Scrub, Semi-improved neutral grassland	LBH	LBH	1.51
43	Pear Wood and Stanmore Country Park	M	Ancient and secondary woodland, neutral and acid grassland, standing water	LBH	LBH/HNCF	59.61
44	Royal National Orthopaedic Hospital	1	Broad- leaved woodland, scrub, vegetated walls, tall herbs, acid and amenity grassland	RNOH Trust	RNOH Trust	22.42

Key to abbreviations used in Table 4:-

LBH: London Borough of Harrow
HNCF: Harrow Nature Conservation Forum
BPNRMC: Bentley Priory Nature Reserve Management Committee
RNOH: Royal National Orthopaedic Hospital

Map ID: Use to locate the SINCs depicted in Figure 1 (below)

Figure 1: Sites of importance for Nature Conservation (SINCs)



2.2 The Harrow Biodiversity Partnership

In August 2006 the Harrow Biodiversity Partnership (HBP) was formed. The HBP highlighted the wealth of knowledge held by local wildlife enthusiasts and was useful in producing the first Harrow BAP in 2007. Members of the partnership particularly the Harrow Nature Conservation Forum (HNCF) have successfully raised the profile of biodiversity in Harrow and delivered many conservation projects, all the while engaging with the people of Harrow.

This second Biodiversity Action Plan will be delivered by Harrow Council, honing in and working together with selected partner organisations in Harrow including land owners and managers as well voluntary organisations and biodiversity experts and the wider community. These will include:

- **Crane Valley Partnership (CVP)**
- **Bentley Priory Nature Reserve Management Committee (BPNRMC)**
- Bentley Wood High School
- **Brent Catchment Partnership (BCP)**
- Butterfly Conservation (Hertfordshire & Middlesex)
- Environment Agency
- Friends of Canons Park
- Froglife
- **Greater Stanmore Country Park Management Committee (GSCPMC)**
- Grim's Dyke Golf Club
- Grim's Dyke Hotel
- Harrow Bee Keepers Association
- **Harrow in Leaf**
- **Harrow Natural History Society (HNHS)**
- **Harrow Heritage Trust (HHT)**
- **Harrow Nature Conservation Forum (HNCF)**
- Harrow Recreation Ground Users' Association
- **Harrow School**
- **Harrow Weald Common Conservators**
- Hertfordshire & Middlesex Bat Group
- London Natural History Society
- London Flora Project
- Orley Farm School
- Pinner Hill Golf Club
- Pinner Society
- **Royal National Orthopaedic Hospital (RNOH)**
- St Dominics 6th Form College
- **Stanmore Golf Club**
- **The London Wildlife Trust (LWT)**
- **The Shaw Trust**
- Whitchurch School

Bold type = Key Partners**;** Normal type = Other Partners

Harrow Council Departments/Teams:

- Harrow Pride
- Planning Policy
- Development Management
- Housing
- Traffic, Highways & Asset Management

2.3 Local Nature Reserves

In Town and Country Planning, a non-statutory but important indicator of access to natural space is a target for a local authority to provide 1 ha of Local Nature Reserve (LNR) per 1,000 residents. Applying this formula, Harrow would need a total of 239.1 ha of LNR to meet the 2011 population[4] needs. This would be a significant challenge in Harrow where currently only 139 ha of the borough are declared as LNRs. Below are the current LNRs, the year declared and area[5]

- Bentley Priory, 1993 (59.25 ha)
- Stanmore Common, 1995 (49.2 ha)
- Stanmore Country Park, 1995 (area 30.75 ha)

The Approach of this Plan is to seek to develop new Local Nature Reserves to help address this deficit, possible candidate sites are:

- Roxbourne Rough Nature Reserve
- Harrow Cemetery
- Roxeth Park Nature Area
- Wood Farm (Stanmore Country Park Extension)
- Canons Park Spinney

These sites were selected as they are Sites of Importance for Nature Conservation (see 2.1 and 2.4), with public access and (with the exception of Wood Farm) they are situated in urban areas. Wood Farm is a natural addition to Stanmore Country Park LNR with which it is contiguous.

In addition there may be scope to extend the boundaries of existing LNRs

2.4 Sites of Importance for Nature Conservation in Harrow

The Sites of Importance for Nature Conservation (SINCs) are greenspaces considered important for nature conservation due to the habitats and species they support. Most provide opportunities for people to access and experience nature as well as helping protect important populations of plants and animals.

[4] 2011 Census states the population of Harrow as 239,100

[5] More information: http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp

There are 44 SINCs in Harrow (see Table 4 and Figure 1 above), 5 are of Metropolitan Importance, 6 are of Borough Grade 1 importance, 14 are of Borough Grade II importance and 19 are of Local importance. The London Plan policy 3D.14 requires boroughs to protect sites of nature conservation value, regardless of grading. Development Management policies DM20 and DM21 protect SINCs from inappropriate development and seek enhancements for these sites. The 44 SINCs in Harrow are depicted in the Adopted Policies Map and the Site Allocations Plan 2013 which form part of the Local Plan suite of documents.

2.5 Habitats

Heather *Calluna vulgaris* in acid grassland – Photo: Denis Vickers

A range of national or regional (London) priority habitats are present in Harrow. Baseline data on the types and amounts of these (and other) habitats is quoted in Table 5 below. UK BAP Priority habitat types do not always exactly relate to those identified by the Greater London Authority in London. Where this is the case, the closest corresponding UK habitat type(s) is given.

Table 5: Habitats in Harrow

Habitat type (GLA Habitat Survey)	UK BAP Priority habitat type	London Priority habitat	Total area (ha)
Amenity grassland			362.55
Native broadleaved woodland	Lowland woodland	Y	236.23
Improved or re-seeded agricultural grassland			114.21
Scattered trees			93.23
Neutral grassland (semi-improved)			75.99
Scrub			64.52
Acid grassland	Acid grassland	Y	57.05
Bare artificial habitat			55.04
Native hedge	Hedgerows		41.95
Non-native broadleaved woodland		Y	35.67
Allotments (active)			28.35
Neutral grassland (herb-rich)	Lowland Meadows		27.27
Tall herbs			23.73
Roughland (intimate mix of 9, 14 and 6)			22.6
Ruderal or ephemeral			19.94
Standing water (includes canals)	Standing open water and canals	Y	17.28
Planted shrubbery			16.61
Bog	Lowland raised bog	Y	9.06
Non-native hedge			7.69
Bare soil and rock			6.77
Other			6.23
Bracken			6.14
Running water (rivers and streams)	Rivers and streams	Y	6.06
Coniferous woodland			4.83
Ditches (water filled)			3.94
Wet marginal vegetation	Fen, marsh and swamp	Y	2.96
Orchard	Traditional orchard	Y	1.76
Vegetated walls, tombstones etc.			1.29
Habitat information not available			1.18
Typha etc. swamp	Fen, marsh and swamp	Y	1.04
Reedswamp	Fen, marsh and swamp	Y	0.58
Heathland	Lowland heathland	Y	0.19
Fen carr (woodland or scrub over fen)	Wet woodland	Y	0.17
Recently felled woodland			0.08

2.6 Key habitats of ecological importance for Harrow with regards to conserving and enhancing biodiversity

- Bare ground
- Built environment
- Decaying Timber
- Gardens and Allotments
- Grassland (meadows and acid grassland)
- Heathland
- Parks
- Standing and Running Water (ponds, lakes, rivers and streams)
- Wasteland (Brownfield)
- Woodlands (ancient, wet and secondary)
- Wildlife corridors

2.7 National or regional BAP species recorded in Harrow

A number of species present in Harrow are important national/regional indicator species. These include bats, birds, reptiles, amphibians, and insects (see table 6 below).

Table 6: National/Regional BAP indicator species in Harrow

Species	Group
Amphibians	amphibians
Barn Owl	bird
Bats	mammals
Bladderwort	flowering plant
Bluebell	flowering plant
Cinnabar	insect - moth
Common Starling	bird
Common Swift	bird
Common Toad	amphibian
Coralroot	flowering plant
Cross-leaved Heath	flowering plant
Devil's-bit Scabious	flowering plant
Hard-fern	fern
Heath Spotted-orchid	flowering plant
Hedge Accentor	bird
House Martin	bird
House Sparrow	bird
Marbled White	insect - butterfly
Mistletoe	flowering plant
Southern/Red Wood Ant	insect - hymenopteran
Reptiles	reptiles

Sky Lark	bird
Small Heath	insect - butterfly
Song Thrush	bird
Stag Beetle	insect - beetle (Coleoptera)
Tawny Owl	bird
West European Hedgehog	Mammals excl. Bats
White Admiral	insect - butterfly

2.8 Bat species

There are 9 species of bat recorded in Harrow. Bats are a national priority species and protected under the European Habitats Directive. Bats are considered a good indicator of the health of the natural environment because they are sensitive to environmental change and because of their reliance on flora and fauna.

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Nathusius pipistrelle *Pipistrellus nathusii*
- Daubenton's bat *Myotis daubentonii*
- Noctule *Nyctalus noctula*
- Brown long-eared bat *Plecotus auritus*
- Leisler's bat *Nyctalus leisleri*
- Natterer's bat *Myotis nattereri*
- Serotine bat *Eptesicus serotinus*

2.9 Birds of conservation concern in Harrow

Table 7 below lists all the Birds of Conservation Concern (BoCC) recorded in Harrow. The Red List species are birds that have suffered severe decline in breeding population or are globally threatened. The Amber List birds are those that have suffered moderate decline or are of European concern. A link to the BTO report on the conservation status of birds is attached. http://www.bto.org/sites/default/files/u12/bocc3.pdf

Table 7: Red and Amber list bird species recorded in Harrow

Red list	Amber list
Blue-headed Wagtail	Barn Owl
Common Cuckoo	Barnacle Goose
Common Grasshopper Warbler	Black redstart
Common Linnet	Black-headed Gull
Common Starling	Bullfinch
Eurasian Tree Sparrow	Common Redstart
Eurasian Wryneck	Common Sandpiper
European Turtle Dove	Common Tern
Fieldfare	Common Whitethroat
Hawfinch	Crested Tit
Hen Harrier	Curlew
Herring Gull	Dunnock

House Sparrow	Firecrest
Lesser Redpoll	Gadwall
Lesser Spotted Woodpecker	Green Sandpiper
Marsh Tit	Green Woodpecker
Northern Lapwing	Grey wagtail
Red-backed Shrike	Greylag Goose
Redwing	House Martin
Ring Ouzel	Jack Snipe
Ruff	Kestrel
Sky Lark	Kingfisher
Song Thrush	Lesser Black-backed Gull
Spotted Flycatcher	Little Grebe
Tree Pipit	Mallard
Whimbrel	Meadow Pipit
Willow Tit	Mediterranean Gull
Wood Warbler	Merlin
Yellow Wagtail	Mistle Thrush
Yellowhammer	Nightingale
	Osprey
	Pintail
	Pochard
	Red Kite
	Reed bunting
	Sand Martin
	Shoveler
	Smew
	Snipe
	Stock Dove
	Swallow
	Swift
	Teal
	Tufted Duck
	Wheatear
	Whinchat
	Willow Warbler
	Wood Sandpiper
	Woodcock

Red list = species of high conservation concern
Amber list = species of medium conservation concern

2.10 Species Action Plans

Many species will be conserved as a result of works to the sites and habitat[6], which they relate to. However there are instances when specific species action plans (SAPs) are needed. For example, some species use a wide variety of habitats, whilst other species may be especially important within the local area. The criteria for selecting species are:

- All London priority species, especially if there is much potential locally to contribute towards national species targets
- Species virtually unique to the borough or London with a significant proportion of the national population
- Species declining, assessed where possible over the last 25 years

[6] Habitat Action Plans are not being compiled, the Themed Actions covered here replace the individual habitats plans which have been traditionally produced in the past

- Rare species resident in the Borough (i.e. not those passing through)
- Species threatened locally by, for example, lack of management, inappropriate management, recreation, pollution, development
- Species distinct to the borough, regardless of whether it has a high profile or is popular
- Species that serve as good indicators of habitat and/or habitat quality

Based upon these criteria the following species action plans are to be included as standalone documents to accompany and support the Harrow BAP:

- Bats
- Heath Spotted Orchid
- Reptiles and Amphibians
- Southern Wood Ants
- Hedgehogs
- Coralroot

It is possible that the need for additional species action plans will become apparent during the implementation of the Harrow BAP. These will be drafted as necessary.

Grass-snake *Natrix natrix*, Pear Wood, Photo: Claire Abbott

2.11 Trees: Pests and Diseases

Britain's trees are facing an onslaught by a range of potentially very damaging plant pests and diseases. In most cases these entered the country from abroad via contaminated nursery stock or even wind-blown from the continent. Forestry Commission research indicates that climate change will create the conditions for increased pest and disease activity in the future. All those involved in tree/land management, whether council officers or volunteers and residents of Harrow, should remain vigilant. There is a useful Forestry Commission website which will aid with the identification of pests and diseases http://www.forestry.gov.uk/forestry/infd-9c9hhr. Incidents of possible pests and diseases should be reported to Traffic, Highways & Asset Management Services, Environment and Enterprise for investigation (http://www.harrow.gov.uk/info/200089/street_care_and_cleaning/728/tree_maintenance/2). Harrow will mitigate for the affects of the pest or disease as soon as possible in line with Forestry Commission recommendations.

2.12 Invasive non-native species

Invasive non-native species (or INNS) are thought to be the second biggest threat to biodiversity after habitat loss and destruction. It is important to make the distinction between **non-native** and **invasive** as there are many non-native species that are not invasive and do not cause any damage:

- **Non-native species** are any species that have been introduced by people either deliberately or accidentally.
- **Invasive non-native species** are defined as any introduced species that causes, or is thought may cause, serious negative impact on our native species, our health or our economy.

Species native to any region, including the UK, can become invasive if introduced to an area outside its natural range. Over time, plants, animals, fungi and microorganisms across the world have become increasingly mobile, largely because of activities of humans who in their travels have carried species with them. This movement has brought species into systems that have developed without them. In some circumstances, the conditions that limit their growth in their natural system (such as nutrients, moisture, pests and diseases) are not present in the new systems. This allows some species a chance to grow and reproduce unchecked. This is when INNS can become a major issue and coordinated management is needed.

Invasive species can also be a threat to human health, agriculture and industry. Many invasive plant species can out-compete and significantly reduce crop yields through either direct competition or predation.

Due to the large number of non-native species in the UK, the London Invasive Species Initiative (LISI) have put together a list of species[7] that are, or are

[7] *LISI's Species List of Concern* is constantly changing so that it can represent what is happening in the environment as accurately as possible - visit LISI website

thought likely to become a threat within the Greater London area. The species list is specific to the London area but many of the species are threats throughout the United Kingdom.

A number of problematic invasive species are known in Harrow including Japanese knotweed, giant hogweed, Himalayan balsam, parrot's-feathers and New Zealand pigmy-weed. With regards to the coordinated prevention, control and management of these species and other INNS, the LISI website (http://londonisi.org.uk/) should be consulted

Section 3: The Action Plan

3. Themed Action Plan

The Action Plan will run from 2015 to 2020. It is divided into 5 themes which encompass a wide-range of subject areas:

1. Wildlife and Ecosystem services
2. Green Belt Woodland and Urban Forest
3. The Built Environment
4. Climate change and sustainability
5. Engaging with Nature

Three types of BAP actions are recognised:

1. *Operational*, that address current management of habitats, flora and fauna
2. *Planning*, which support spatial policies or address development management
3. *Resources dependent*, which set actions for increasing habitats and species in Harrow. These include aspirational targets for long-term increase of natural habitat and species in line with national and regional targets

3.1 Resources

Most of the actions in the BAP can be met from existing revenue and capital budget of the Council. Where the need for additional funding has been identified or becomes apparent during the course of this plan, this will be sought from external sources identified under funding strategy (see 3.16 below) and any other funders that become available during the term of this plan. Such funding will be applied for by our external partners (see 2.2 above). The Council's External Funding Manager will help and advise its Partners identify sources of funding (which often entails a complex application process) If funding is not secured for the actions requiring external monies, Harrow Council will not deliver these actions. Any capital costs identified in the BAP or becoming apparent during its delivery, do not constitute a financial commitment from Harrow Council if funding is not available.

3.2 Theme 1: Wildlife and Ecosystems Services

Theme 1, Natural Environment and Ecosystems Services highlights the actions required for the conservation of wildlife and the enhancement of habitats on which it depends. Key objectives are identified; this is followed by a brief introduction to the idea of ecological networks and ecosystem services. In line with some other borough BAPs, themed actions replace the more traditional Habitat Actions Plans (HAPs) that have been produced by local authorities in the past[8]. Ecosystem services refers to the goods and services provided by the natural environment at no cost e.g. decomposition of waste materials, cleaning polluted air and water and the pollinating of food plants by insects.

Theme 1 Objectives

1. **To contribute to the core objectives of England's Wildlife and Ecosystem Strategy including the provision of a coherent and resilient ecological network**
2. **To produce evidence-based and defensible management plans, based on adequate species and habitat audits, for all SINCs in Harrow's management by 2019**
3. **To produce and retain a current baseline of ecological data which is updated annually**
4. **To aim for no net loss of biodiversity**

3.3 What is a coherent and resilient ecological network?

Biodiversity 2020: a strategy for England's wildlife and ecosystem services defines a *coherent* ecological network as one that has multiple elements necessary to achieve its overall objectives. Complementary and mutually reinforcing components ensure that the value of the whole network is greater than the sum of its parts.

A resilient ecological network is one that can absorb, resist or recover from disturbances and damage caused by the urbanisation and the activities of people (including climate change). This network should still be able to support biodiversity and provide ecosystems services.

Harrow has a good coherent and resilient ecological network within the Green Belt to the north of the borough with links between sites either directly or via field boundary hedges, lines of trees and streams. However, the links from the Green Belt to and between SINCs to the south in more urban areas is in many cases poor with some sites isolated within the urban fabric.

[8] A number of species action plans (SAPs) are to be compiled by HNCF – these will be standalone documents which will detail the actions and methodology required to protect and enhance the species listed under paragraph 2.10.

Core areas of high nature conservation value: these contain rare or important habitats and species, or provide ecosystem services. They include protected wildlife sites and other semi-natural areas of high ecological quality. In Harrow these are the SINCs which include nature reserves (most of which are in the Green Belt) and some major parks in more urban areas.

- *Corridors and 'stepping stones'* enable species to 'move' between core areas. These can be made up of a number of small sites acting as 'stepping stones' or a mosaic of habitats that allow species migration and support ecosystem functions. In Harrow this means boundary features such as streams, hedgerows and lines of trees in more rural areas, and avenues of street trees, river corridors (associated with tributaries of the Brent, Crane and Colne), railway corridors, mature gardens and parks in urban areas.
- *Restoration areas* - opportunities for restoration areas are limited within Harrow. Some of the borough's SINCs are under pressure from intensive use and management or have been neglected so that the nature conservation value has declined. Together with our partners we aim to restore some of these sites to provide an improved ecological network e.g. Stanmore Marsh, Newton Park, Queensbury Recreation Ground, Kodak site and nature areas of the Royal National Orthopaedic Hospital (RNOH).
- *Buffer zones* to protect core areas and restoration areas from adverse impacts in the wider-environment, and provide additional 'stepping stones' for species migration. In Harrow farmland, playing fields, gardens and some parks will perform this role.

3.4 Ecosystem Services

The UK National Ecosystem Assessment was published in 2011 (and subsequent follow-on phases 2013 & 2014). This assesses the UK's current state of natural environment and the ecosystem services it provides. Three main areas of ecosystems services are recognised. The chief ecosystems services provided in the Harrow area are shown in Table 8 below.

Table 8: Ecosystem services for Harrow

Ecosystems Services			
Service	**Provision**	**Services/Goods**	**Relevance to Harrow**
Provisioning	Genetic resources	Goods	Maintains important populations of species
Regulating	Air & water quality regulation Noise regulation Local climate regulation Flood regulation Intrusive light regulation Pollination	Services	Important in cooling urban areas, ameliorating air & water quality, and flood regulation
Cultural Services	Recreation Aesthetic values Cultural heritage Spiritual values Education Sense of place Health benefits	Goods	Open spaces play a large part in cultural services and provide opportunities for volunteering, education, recreation and inspiration

Local provision is underpinned by ecosystem services operating in a much wider context and sometimes global scale such as carbon sequestration and climate regulation, the replenishment of oxygen-rich air and the purification of water.

3.5 Actions for Wildlife and Ecosystems Services

Number	Action	Target Date	Lead Partner	Other Partners	Cost implications	Justification
Operational Actions						
BAP1a	Produce biodiversity management plans for all Harrow's SINCs, excluding sites outside Harrow's ownership and those included in Greater Stanmore Country Park (see below).	2018	Harrow Pride Biodiversity Officer	HNCF, HHT, Pinner Association, Friends of Canons Park, Harrow Recreation Ground Users' Association	Staff-time	Meets objective 2 of Theme 1. Contributes to objectives of the Core Strategy
BAP1b	Produce a development plan for Greater Stanmore Country Park (i.e. Wood Farm, Pear Wood and Stanmore Country Park which will include sections on management of the areas currently without active management plans	2015	HNCF Biodiversity Officer, Community Engagement	Harrow Pride	Est.£20,000 Staff time	Meets objective 2 of Theme 1. Contributes to objectives of the Core Strategy
BAP1c	Achieve a target of 5% of all amenity grassland in parks to be managed for biodiversity through management plans, investigate/instigate the establishment of wildflower meadows and woodland ride appropriate areas of parkland	2020	Harrow Pride, Biodiversity Officer	HNCF, HHT, Pinner Association, Friends of Canons Park, Harrow Recreation Ground Users' Association	Staff-time	Meets objective 4 of Theme 1. Meets Regional (London) targets

BAP1d	Obtain invasive species data from GiGL in ArcGIS format. Use as base layer to map additional incidents of invasive species using ArcGIS in collaboration with other council departments and volunteers (e.g. HNCF, HNHS) – make available to GiGL, CVP and BCP	2016	Harrow Pride, Traffic Highways and Asset Management, RES-Web/GIS Team	CVP, BCP, LISI, HNCF, HNHS, GiGL	Staff-time	Meets objective 3 of Theme 1. Feeds into London Invasive species initiative
BAP1e	Monitor invasive species in line with the London Invasive Species Initiative (LISI) and manage accordingly	Annually	Traffic Highways and Asset Management, Harrow Pride	CVP, BCP, LISI, HNCF, adjacent London boroughs	As identified	Meets objective 1 and 4 of Theme 1. Addresses issues with non-native species and their impact on native species. Contributes to London Invasive species initiative
BAP1f	Retain decaying wood and retain standing decaying wood in situ in nature reserves, parks and green spaces wherever appropriate. Retain large stumps and Install new invertebrate loggeries across public realm. Leave timber on site wherever possible, and do not dispose of by chipping unless essential. Link to SINC biodiversity management plans.	Annually	Harrow Pride	HNCF	Staff-time	Meets objective 4 of Theme 1. Contributes to targets in National & Regional BAP by helping the stag beetle and woodland birds
BAP1g	Monitor population of the Nationally scarce Coralroot *Cardamine bulbifera* at Stanmore Common. Compile Species Action Plan detailing protection and management and proceed accordingly	2015	John Dobson	HNCF, Biodiversity Officer, Harrow Pride	Staff-time	Meets objectives 1, 3 & 4 of Theme 1. Contributes to the protection of Regional BAP species
BAP1h	Produce Species Action Plans for bats, amphibians and reptiles, southern wood ant, heath spotted orchid and hedgehog	2017	HNCF	Biodiversity Officer	Staff-time	Meets objectives 1, 3 & 4 of Theme 1. Contributes to the protection of Regional BAP species
BAP1i	Continue with Southern Wood Ant translocation programme from RNOH to re-establish viable colonies in Pear Wood	Ongoing	Phil Attewell, Peter Peretti, HNCF	Biodiversity Officer	Staff-time	Meets objectives 1 & 4 of Theme 1. Contributes to the protection of Regional

	Investigate the possibility of translocating ant colonies to Glenthorne land near Bentley Priory.					BAP species
BAP1j	HNCF access to the full GiGL database to be arranged (as used by the Council). Council to train up to 4 members of HNCF in the retrieval of GiGL data at one of the Council's workstations, HNCF to be able to use database in Civic 1 building and work there for booked sessions.	2015	HNCF, Biodiversity Officer, ResWeb/GIS Team	Planning Services	Staff-time	Meets objective 3 of Theme 1
Planning Actions						
BAP1k	Identify and map potential new green corridors, link to Harrow Green Grid & ALGG. Investigate viable size/distances between wildlife sites and produce feasibility study	2017	Landscape Architect, Biodiversity Officer, Planning Policy	HNCF	Staff-time	Meets objective 3 of Theme 1. Meets objectives of the Harrow Green Grid, Core Strategy objectives, Open Spaces Strategy and ALGG SPD
BAP1l	Review baseline of current biodiversity value of wildlife habitats including: - area of woodland (refer to BAP2g) - area of reedbed - area of rivers & streams - area of standing water - area of wet woodland - area of meadow (semi-improved/unimproved) - area of wildlife corridors - area of green roof (refer to BAP3a) - area of open mosaic on previously developed land (UK BAP habitat) - (refer to BAP3a) Maintain SLA with GiGL	2018	Biodiversity Officer, Planning Policy	Parks, HNCF	Staff-time, SLA with GiGL	Meets objective 3 of Theme 1. Meets objectives of the Core Strategy

BAP1m	Maintain the extent and quality of wildlife habitat from the 2012 baseline with aim of no net loss of biodiversity	Ongoing	Biodiversity Officer, Development Management	Planning Policy	Staff-time	Meets objective 4 of Theme 1. Meets objectives of the Core Strategy & DM Policies
BAP1n	Review Local SINC designations through the Local Plan in line with London Local Sites partnership & Mayor of London's recommendations	2018	Biodiversity Officer, Planning Policy	Wider HBP	Staff-time Cost of surveys (estimated £45,000)	Meets objectives 1 and 4 of Theme 1. Contributes to London Plan and London Local Sites Partnership, in line with the Mayor's Biodiversity Strategy
BAP1o	Use where appropriate Development Management policies DM20 (Protection of Biodiversity and Access to Nature) and DM21 (Enhancement of Biodiversity and Access to Nature) in planning process to protect and enhance SINCs shown in Table 4 and habitats and species listed under paragraphs 2.6, 2.7, 2.8, 2.9 and other species of note in a local, regional or national context.	Ongoing	Biodiversity Officer, Development Management	Planning Policy	Staff-time	Meets Objective 1 of Theme 1 and DM Policies DM20 & DM21
BAP1p	Set up and put into action a procedure to ensure that capital/improvement projects in parks and green spaces result in overall biodiversity gain. Note: This includes making sure lighting schemes do not impact on biodiversity (including protected species such as bats) in line with policy and legislation. Funding for biodiversity improvements to be sought through S106 or Community Infrastructure Levy.	2017	Traffic Highways and Asset Management	Biodiversity Officer, Planning Policy	Staff-time	Meets objective 4 of Theme 1. Meets objectives of the Core Strategy DM Policy 21
	Resource Dependent Actions					
BAP1q	Create new wet woodland area at the confluence of the Yeading and Smart's Brook (including an assessment of existing surface water drainage provision before installing the new systems).	2016	Biodiversity Officer, Traffic Highways and Asset	CVP, LWT	Green Grid Capital	Meets objective 1 of theme 1. Contributes to the Regional and National BAP targets = x% of London Target

			Management			
BAP1r	Create new path along the Yeading Brook in Roxbourne Park (including an assessment of existing surface water drainage provision before installing the new systems).	2016	Biodiversity Officer, Traffic Highways and Asset Management	Harrow Pride, CVP, LWT	Green Grid Capital	Meets objective 1 of theme 1. Improves network of accessible natural greenspace in line with the aims of Harrow Green Grid, ALGG and London Plan
BAP1s	Queensbury Recreation Ground restoration including reprofiling the Kenton Brook, establishing new marshy areas, and arrears of marginal vegetation.	Ongoing	Traffic Highways and Asset Management	St Bernadettes Primary School, BCP	Funding in place £20k EA £180k Harrow Drainage Capital	Meets objective 1 of theme 1. Improves network of accessible natural greenspace in line with the aims of Harrow Green Grid, ALGG and London Plan
BAP1t	Restoration of Stanmore Marsh including new tree and shrub planting, new paths, marshy areas, pond, streams and naturalisation of the Edgware Brook	2018	Traffic Highways and Asset Management, BCP	Biodiversity Officer, Landscape Architect	S106 £225K, Mayor of London's Big Green Fund £175k HHT £7k	Meets objective 1 of theme 1. Improves network of accessible natural greenspace in line with the aims of Harrow Green Grid, ALGG and London Plan
BAP1u	Headstone Manor Recreation Ground including desilting pond and reedbed for improving quality of water flowing in the ancient moat and Yeading Brook	2019	Traffic Highways and Asset Management, BCP	Biodiversity Officer, Landscape Architect	Drain London GI up to £300k Other money from Kodak site S106	Meets objective 1 of theme 1. Improves network of accessible natural greenspace in line with the aims of Harrow Green Grid, ALGG and London Plan
BAP1v	Create a new path through the length of the Spinney in Canons Park to replace existing muddy path and to help remove pressure from delicate ancient woodland ground flora habitats to each side.	2018	Biodiversity Officer, Harrow Pride	Traffic Highways and Asset Management, Friends of Canons Park	Green Grid Capital	Meets objective 1 of theme 1. Improves network of accessible natural greenspace in line with the aims of Harrow Green Grid, ALGG and

						London Plan
BAP1w	Install bat bricks/tubes or tubes in the public realm and built environment and new development.	Ongoing	Traffic Highways and Asset Management	Harrow Pride, HNCF	Materials and installation costs	Meets objective 1 of Theme 1. Contributes to the protection of Regional and national BAP species
BAP1x	Plant nectar, and pollen rich plants in borders and beds in the public realm and parks and open spaces to encourage bee foraging. Target 25% of new planting to meet these criteria. Plantings to include early and late year nectar/pollen sources	2017	Harrow Pride, Traffic Highways and Asset Management	Biodiversity Officer	Staff-time	Meets objective 1 of Theme 1. Contributes to Capital Bee project and increases pollinators habitat
BAP1y	Establish a Hazel coppice on previously cleared Glenthorne land	2017	Peter Peretti HNCF	Biodiversity Officer Landscape Architect	£500 Staff time	Meets objective 1 of Theme 1. Meets Harrow Green Grid and ALGG objectives
BAP1z	Create area suitable for amphibians in the toe area of Boot Pond, Bentley Priory SSSI	2015	Froglife	BPNRNC, HNCF, Biodiversity Officer	£9.000 from Froglife (via external funder) Staff Time plus £1,000 match funding	Meets objective 1 of Theme 1. Contributes to the protection of Regional BAP species

3.6 Theme 2: Green Belt Woodland and the Urban Forest

Theme 2 objectives:

1. **To maintain and protect the current tree stock in line with London and local targets**
2. **Increase overall tree coverage in line with London and local targets (tree planting applicable only on land of low ecological value e.g. not acid or species rich grasslands)**
3. **Protect Harrow's secondary and ancient woodlands from development**
4. **Manage (and where appropriate enhance the biodiversity value of) the borough's trees and woodlands**

Green Belt Woodland is generally semi-natural, self-established woodland in those more open areas to the north of the borough. For the purposes of this document the 'Urban Forest' is defined as the trees, woodland and hedges in the built-up parts of Harrow. The network of these habitats plays an important role in maintaining the nature network, not only in Harrow but across London and beyond. Trees also play a vital role in sustainability of the built environment, helping ameliorate the impact of the urban heat island.

Green Belt trees within Harrow's nature reserves and other wilder greenspaces are generally allowed to follow a more natural life-cycle. Trees are often left to die and decay *in situ* unless doing so would pose a particular problem to human health or wellbeing.

Routine management of Harrow Council's urban trees is undertaken to ensure the trees are suitable for their setting, increase longevity and reduce failure. Management includes pollarding, crown lifting and reduction. If a tree is dead, dying or dangerous, it is likely to be removed.

Whether in town or countryside many species are facing increased threats from foreign pests and diseases such as ash dieback or the horse chestnut leaf-miner (see 2.10).

3.7 Benefits of trees

There are many benefits from trees, woodland and hedgerows. Some are identified below:

Environmental

- In the south of Harrow, parks and open spaces are often the only publicly accessible greenspace. Trees provide both structure and shade in these open spaces.
- Trees play a crucial role in mitigating climate change. Over a year a mature tree removes about 22kg of carbon dioxide from the atmosphere.

- Trees are essential for improving air quality. Leaves absorb air pollutants such as ozone, carbon monoxide, and sulphur dioxide. Dust and other particulates are collected by leaves and washed to the ground by rain, rather than remaining in the air
- They have a role in reducing runoff during flash-floods (providing an alternative to engineering solutions). Vegetation also intercepts more rain thereby reducing the likelihood of flash-flooding. The numerous leaves of trees (and other plants) provide a greater area for water to evaporate from than flat surfaces

Biodiversity

- Trees provide birds with nesting places, opportunities to forage, and cover from predators; trees provide roost sites, commuting routes and foraging opportunities for bats; they also support many species of insects.
- Lines of trees are important as they act as links between greenspaces allowing wildlife to move between sites.
- A tree clad in ivy is a valuable wildlife resource: it can provide bats with roosting sites and birds with nesting opportunities. During the autumn and winter months it offers a late source of nectar for insects, and foraging and shelter for birds at a time of year when deciduous trees are leafless and dormant.
- Decaying wood of all types, but particularly standing, is a valuable habitat and asset for a variety of fauna. For example, woodpeckers, nuthatch and treecreeper are often dependent on this resource for foraging and nesting. Additionally, a wide variety of insects are associated with dead wood and many species of fungi are completely dependent upon it.
- Woodlands generally provide a rich habitat for fungi and a variety of fauna including birds, bats and invertebrates.
- Ancient woodlands are particularly rich in invertebrate fauna and fungi and provide niches for woodland specialists, a number of which are nationally rare.

Health & Wellbeing

- Most people prefer to live and work in green and leafy surroundings. In denser housing developments trees are often the only substantial greenery available as space for private gardens is limited.
- Trees will absorb, and therefore reduce, noise. Their leaves improve the air we breathe by trapping particulate matter and releasing oxygen.
- Woodlands and green spaces (including tree-lined streets) can reduce symptoms of stress and other mental health problems, and improve general wellbeing.
- The cooling effect of trees is especially important during summer when excessive heat can sometimes lead to illness or occasionally death within vulnerable groups of people – trees help to ameliorate the heat island effect associated with urban areas. Deciduous trees in particular

are most beneficial: they provide shade in the summer but allow solar gain in the winter months, when the sun is generally more valued?

Aesthetic

- Trees can help to form the identity of an area. They can be important local landmarks and give a sense of continuity and place. Specific species can become part of the ambience of a neighbourhood, for example old roadside oaks (particularly in the Green Belt) might be relicts of tree-lined lanes and field boundaries, and giant redwoods living connections with great country estates that existed in Harrow just prior to urbanisation.
- Trees add to their surroundings by providing colour and texture to an area, softening harsh lines of buildings, screening unsightly views and contributing to the character of their environment.

Education

- Trees, woodlands and hedgerows provide a rich resource for education in biodiversity and increase awareness of biodiversity.

The Master Oak *Quercus robur*, Bentley Priory SSSI – its age is estimated at more than 350 years and is possibly one of the oldest pedunculate oaks in Greater London - Photo: Environment Agency

3.8 Actions for Green Belt Woodland and the Urban Forest

Number	Action	Target Date	Lead Partner	Other Partners	Cost implications	Justification
Operational Actions						
BAP2a	Ensure data held on ArcGIS corporate layer is up to date and synchronised with Ezytreev[9] database to allow wider access and facilitate monitoring of BAP targets.	2017	Traffic Highways and Asset Management, ResWeb/GIS Team	Biodiversity Officer	Staff time	Meets Theme 2: Objectives 1 & 2, Important step in assessing Harrow's role in meeting the Mayor's objectives for an extra 2 million trees in London by 2025; and Harrow Climate Change Strategy 2013 onwards - we must first know the extent of the asset.
BAP2b	Increase street tree cover by 1% and increase biodiversity value by planting native species of tree or wildlife attracting non-native species. The planting (and maintenance) of Metroland should be considered where appropriate	2020	Traffic Highways and Asset Management	Biodiversity Officer, Pinner Association	Staff time	Meets Theme 2: Objective 2 is in line with Policies DM 21 & DM22, the aims of the Harrow Green Grid & All London Green Grid SPG. Is a step towards meeting Harrow Climate Change Strategy 2013 onwards targets the Mayor's objectives for an extra 2 million trees in London by 2025

[9] Ezytreev includes all publicly owned trees on an integrated software system (this co-ordinates the management of trees by monitoring and recording Council tree works, including new tree planting and works to existing trees).

BAP2c	Investigate appropriate linkages (i.e. where biodiversity will not be adversely impacted) into woodlands from transport nodes using improved signage and tree planting to emphasise links	2016	Biodiversity Officer	Traffic Highways and Asset Management, Landscape Architect, Tree Officer, HNCF	Staff time	Meets Theme 2: Objective 2. Is in line with Policies DM 21 & DM22, the aims of the Harrow Green Grid & All London Green Grid SPG. Is a step towards meeting Mayor's objectives for an extra 2 million trees in London by 2025, Mayor's Tree & Woodland Framework for London 2005 and Tree & Woodland Strategies SPG 2013
BAP2e	Audit of borough's ancient, veteran, specimen and champion trees, definition of categories - record positions, species and condition on ArcGIS database. Report ancient tree records to Ancient Tree Forum.	2018	Traffic Highways and Asset Management, ResWeb/GIS Team	Harrow Pride, HNCF, HNHS and Biodiversity Officer	Staff time	Meets Theme 2: Objective 4 Trees included in this list are of specific biodiversity or landscape value and should be protected accordingly. Aligns with Policies DM20 & 22
BAP2f	Review street tree maintenance procedures as to when thinning, lopping etc are undertaken - Ideally this should not be in the bird breeding season (March to August inclusive)	2016	Traffic Highways and Asset Management	Biodiversity Officer	Staff time	Meets Theme 2: Objective 4 and Policies DM 20 & 21
BAP2g	Audit of borough's ancient and secondary woodlands. This will include definition, extent, condition, overall biodiversity value, protection and way forward	2019	Traffic Highways and Asset Management, Biodiversity Officer	HNCF, Harrow Pride	Staff time	Meets Theme 2: Objectives 1, 3 and 4, is in line with Policy DM 21

BAP2h	Regularly monitor health of trees & woodland in Harrow's control, particularly with regards to pests & diseases	Ongoing	Traffic Highways and Asset Management	Tree Officer, Biodiversity Officer, HNCF	Staff time	Meets Theme 2: Objective 1 in line with Mayor's Tree & Woodland Framework for London 2005 and Tree & Woodland Strategies SPG 2013
BAP2i	Complete tree strategy for Harrow and link to Biodiversity Action Plan and regional/national BAPs and strategies	2015	Traffic Highways and Asset Management	Harrow Pride, Tree Officer, Biodiversity Officer, Landscape Architect	Staff time	Meets Theme 2: Objectives 1, 2 & 4. In line with Mayor's Tree & Woodland Framework for London 2005 and Tree & Woodland Strategies SPG 2013
Planning Actions						
BAP2j	Protection of all veteran and ancient trees of ecological (and historical) value. Tree Preservation Orders to be sought where appropriate	Ongoing	Development Management, Tree Protection Officer	Biodiversity Officer	Staff time	Meets Theme 2: Objectives 1 & 4 and Policies DM 21 & 22
BAP2k	Ensure new developments are planted with appropriate native or wildlife attracting species	Ongoing	Development Management	Biodiversity Officer	Staff time	Meets Theme 2: Objectives 1 & 4 and Policies DM 21 & 22
BAP2l	Any development adjacent to ancient woodland must retain a minimum 15 m buffer zone	2015	Development Management	Biodiversity Officer	Staff time	Meets Theme 2: Objective 3 Meets Policy DM 20, objectives of the London Plan and the NPPF and Standing Advice from Natural England 2014

Resource Dependent Actions						
BAP2m	Where appropriate, restock trees in parks and open spaces with 50% native species in line with Right Place Right Tree policy	Ongoing	Traffic Highways and Asset Management, Harrow Pride	Landscape Architect	£500/tree	Meets Theme 2: Objective 4. In line with Mayor's Tree & Woodland Framework for London 2005 and Tree & Woodland Strategies SPG 2013
BAP2n	Where appropriate, plant trees along streets highlighted in the Harrow Green Grid project map and schedule. Planting should be in line with Right Place Right Tree policy. Native species should be planted where appropriate.	Ongoing	Traffic Highways and Asset Management	Landscape Architect	£500/tree Green Grid capital	Meets Theme 2: Objective 4. In line with Mayor's Tree & Woodland Framework for London 2005 and Tree & Woodland Strategies SPG 2013

3.9 Theme 3: The Built Environment

Theme 3 objective:

1. **Enhancement of the built environment for biodiversity**

The built environment might be seen as a wildlife unfriendly place that is poor in flora and fauna. It is however an important habitat for a surprising number of plant and animal species. Moreover, the provision of greenspaces such as parks, gardens and other green infrastructure situated within the urban fabric helps to regulate the environment and improve quality of life for people living and working there.

A number of species of wildlife have made their home in these built areas living alongside and in harmony with the human population. Included in their ranks are a variety of bats, birds and insects, some of which are species of conservation concern

The expected multifunctional use of green infrastructure and the need for new housing can put pressure on urban greenspaces e.g.: if not done sensitively, providing access to nature via green corridors can displace the wildlife it seeks to give access to; new housing might be proposed within or adjacent to Sites of Importance for Nature Conservation which if built without appropriate consideration will diminish the site's value to wildlife; additionally many new builds have sealed exteriors which are not appropriate for roosting bats or nesting birds.

House sparrows *Passer domesticus,* Photo: John Winter

3.10 Actions for the Built Environment

Number	Action	Target Date	Lead Partner	Other Partners	Cost implications	Justification
Planning Actions						
BAP3a	Collate baseline of the current biodiversity value of the built environment, including: - area of living roof - area of open mosaic habitat on previously developed land (UK BAP habitat) AKA wasteland/brownfield other habitat within the built environment e.g. gardens	2016	Biodiversity Officer, GiGL	Traffic Highways and Asset Management	Staff time	Meets objective 1 of Theme 3. Important step in meeting the objectives of the Core Strategy
BAP3b	Ensure protection and enhancement for biodiversity is integrated into Council Planning policies and strategies, such as AAP's, SPD's and final Tree Strategy and into infrastructure practices such as, drainage, street lighting etc.	Ongoing	Planning Policy	Biodiversity Officer	Staff time	Meets objective 1 of Theme 3 Meets objectives of the Core Strategy, Harrow Climate Change Strategy 2013 onwards and draft tree strategy
BAP3c	Where appropriate a residential development should achieve a minimum of 50% of the Ecology Credits from the Code for Sustainable Homes. Major non-residential developments should achieve a minimum of 50% of the Ecology Credits under BREEAM or equivalent	Ongoing	Planning Policy, Development Management	Biodiversity Officer	Staff time	Meets objective 1 of Theme 3 In line with Development Management Policies on Environmental Sustainability and London Plan

BAP3d	Developments should incorporate nesting and/or roosting sites for relevant species of birds and/or bats. Preference should always be given to 'built-in' features such as roosting bricks, bat tubes and bat bricks. With regards to birds, priority should be given to Species of Conservation Concern in Harrow (Table 6) appropriate to the surrounding habitat. Insect 'hotels' and a range of other invetebrate habitat feature should be fitted where it is appropriate	Ongoing	Planning Policy, Development Management	Biodiversity Officer, HNCF	Staff time	Meets objective 1 of Theme 3 Meets objectives of the Core Strategy
BAP3e	Encourage the provision of green/brown roofs on new builds using planning conditions where appropriate	Ongoing	Planning Policy, Development Management	Biodiversity Officer	Staff time	Meets objective 1 of Theme 3 In line with Development Management Policies on Environmental Sustainability and London Plan
BAP3f	Where appropriate, encourage the provision of native planting including trees in soft landscaping schemes of new developments	Ongoing	Development Management	Biodiversity Officer	Staff time	Meets objective 1 of Theme 3 In line with Development Management Policies on Environmental Sustainability and London Plan
BAP3g	Seek Green Infrastructure chapter in Design & Access statements for major planning applications	Ongoing	Planning Policy	Biodiversity Officer	Staff time	Meets objective 1 of Theme 3. Contributes to objectives in NPPF
Resource Dependent Actions						
BAP3h	Introduce small or medium-sized wetland features into the urban environment wherever possible. These could include ponds, mini-SuDS, wildlife-friendly riparian zones alongside ditches, seasonally wet grassland etc.	ongoing	Traffic Highways and Asset Management,	Harrow Pride	Staff-time	Meets objective 1 of Theme 3 Meets objectives of the Core Strategy, Harrow Climate Change Strategy

BAP3i	Deculvert existing watercourses wherever the opportunity arises.	ongoing	Traffic Highways and Asset Management, Environment Agency		Staff-time	Meets objective 1 of Theme 3 Meets objectives of the Core Strategy, Harrow Climate Change Strategy
BAP3j	Develop Water Level Management Plans (WLMPs) for all LNRs to help ensure the long-term stability and health of their hydrology.	2020	HNCF, Traffic Highways and Asset Management	Harrow Pride Biodiversity Officer	Staff-time	Meets objective 1 of Theme 3 Meets objectives of the Core Strategy
BAP3k	Develop a policy/system of rotational management of ditches and wetland features, to ensure that for example ditch clearing/dredging does not result in near 100% habitat loss in any particular year. JRD	2018	Traffic Highways and Asset Management, Harrow Pride, HNCF	Biodiversty Officer	Staff-time	Meets objective 1 of Theme 3

3.11 Theme 4: Climate change and sustainability

Theme 4 objectives:

1. **To deliver ecological solutions to offset the impacts of climate change**
2. **To reduce the urban heat island effect and improve air and water quality**
3. **Control/management of invasive species as listed under the London Invasive Species initiative (LISI) and Schedule 9 Part 2 of the Wildlife & Countryside Act (& amendments)**
4. **Minimise pollution of the environment and promote recycling**

In common with the rest of the UK, it is probable that Harrow will experience the effects of climate change over the following years. It is widely accepted that this is likely to result in a generally warmer climate with significantly wetter winters and drier summers. It is impossible to predict the exact nature of these changes and how these will impact on Harrow. Sustainability is the principle of meeting the needs of present generations without compromising the ability of future generations to meet their own needs. It covers a wide range of interrelated topics from sourcing raw materials and food, energy efficiency, recycling and composting.

There are three main biodiversity related climate change and sustainability issues which are covered here (although there is considerable crossover with previous themes which will not be duplicated here):

1. *Invasive species and biosecurity:* Some garden species of plants and animals have become invasive as warmer winters have allowed them to reproduce. A number of other species are on the cusp of becoming invasive and could do so in the event of regular warmer winters. Some plants and animals were intentionally bought here by past collectors and have escaped to the wider countryside and proliferated. A number of pest species have been accidentally transported here as a result of our travels or entered via contaminated plant material or as spores carried in the wind. Some known invasive species are freely available from garden centres (although some have been recently banned from sale.

2. *Adaptation to climate change:* Includes a number of measures that can also benefit biodiversity e.g. the installation of green and brown roofs and living walls can insulate buildings and optimise the performance of photovoltaic cells. Together with sustainable urban drainage systems (SuDS) and other green infrastructure the impacts of climate change can be offset: the urban heat island effect is less intense and water run-off reduced. These adaptation measures are particularly beneficial for biodiversity when planted with plants indigenous to the local area.

   A large part of Harrow's river network has been greatly altered from its natural state. Sections of the borough's rivers have been straightened,

now run in underground in pipes or are contained by steel and concrete culverts. This has generally had the effect of reducing their value to wildlife, and often amenity too. Naturalising rivers means features of wildlife value such as meanders, vegetated banks and riffles will be encouraged. This also means that the rate of flow of water downstream will be reduced providing more natural patterns of flooding. The improvement of these watercourses to 'good ecological/potential' and not allowing any deterioration in their status are key requirements of the Water Framework Directive (WFD).

3. *Sustainability:* Under this heading river pollution, composting and the use of pesticides are probably of greatest importance to borough's biodiversity. River pollution is often caused by domestic misconnections where sources of foul water are plumbed into surface water drains. The Environment Agency is the enforcing body for all incidents of pollution and have a 24-hour incident hotline to contact 0800 80 70 60. Composting includes municipal waste (where it is an aim to compost 50% of all waste by 2020) and should encourage allotment holders and gardeners to compost. The tidying up of allotments and gardens, not composting and the over use of pesticides are amongst the reasons for the decline in hedgehogs here in Harrow (and the country as a whole). The use of some pesticides such as neonicotinoids have been cited as causing serious problems with bee populations and other invertebrates and with the potential collapse of the food chain of 'farmland' birds such as the swallow and starling.

Hedgehog *Erinaceus europaeus* – Photo: Claire Abbott

3.12 Actions for Climate Change and Sustainability

Number	Action	Target Date	Lead Partner	Other Partners	Cost implications	Justification
Operational Actions						
BAP4a	Promote 'organic' management techniques in Harrow's open spaces, allotments and private gardens i.e. composting and no use of pesticides (except to control invasive species) and zero use of all neonicotinoids. Produce an advice note to be distributed from Civic Centre, Harrow Museum, libraries and via Harrow in Leaf	2015	Biodiversity Officer, Harrow Pride	Harrow in Leaf	Staff time	Meets Objective 4 of Theme 4
BAP4b	Promote sourcing plants for parks and open spaces from local or UK provenance	2016	Harrow Pride	Landscape Architect	Staff time	Meets objective 1 of Theme 4.
BAP4d	Develop program to eradicate Japanese knotweed & giant hogweed in parks and open spaces in collaboration with adjoining boroughs and other stakeholders.	2017	Harrow Pride, Traffic Highways and Asset Management	Brent Catchment Partnership, Crane Valley Partnership, adjoining boroughs	Staff time	Meets objective 3 of Theme 4. Feeds into London Invasive Species Initiative. Meets objectives of the Crane Valley Catchment Plan and Brent Catchment River Corridor Plan
BAP4e	Promote the GB Non-native Species Secretariat's Check, Clean, Dry initiative to help control the spread of invasive non-native species. Distribute the Wildlife Trusts leaflet to angling clubs and others using rivers and lakes	Ongoing	Biodiversity Officer	Traffic Highways and Asset Management, Harrow Pride	Staff time	Meets Objective 3 of Theme 4. Supports LISI, is compliant with S.9 of the W&C Act 1981

BAP4f	Insert a biosecurity clause in Council contracts to promote good practice of council contractors involved in site maintenance, capital works etc.	2016	Harrow Pride, Traffic Highways and Asset Management	Biodiversity Officer, Legal		Meets Objective 3 of Theme 4. Supports LISI, is compliant with S.9 of the W&C Act 1981
BAP4g	Procure plants supplied in reduced or peat free soil and pesticide free.	2016	Harrow Pride, Traffic Highways and Asset Management	Biodiversity Officer	Staff time	Meets objective 3 of Theme 4. In line with recommendations from Environment Agency
BAP5h	Report all significant river pollution incidents to the Environment Agency's 24-hour incident hotline to contact 0800 80 70 60	2015	All council departments and partner organisations, members of the public		Staff-time	Meets objective 4 of theme 4
Planning Actions						
BAP4i	Promote native planting of Sustainable Urban Drainage Systems (SuDS) wherever possible using planning conditions where appropriate	2015	Traffic Highways and Asset Management Development Management	Biodiversity Officer Planning Policy	Staff time	Meets objective 1 of Theme 4. Meets objectives of Harrow Climate Change Strategy April 2013 onwards and Harrow Core Strategy
BAP4j	Promote native planting of new habitats created via river restoration projects using planning conditions where appropriate	2015	Traffic Highways and Asset Management Development Management	Biodiversity Officer Planning Policy	Staff time	Meets objective 1 of Theme 4. Meets objectives of Harrow Climate Change Strategy April 2013 onwards, Harrow Green Grid, Harrow Core Strategy & Water Framework Directive (WFD) 2000

BAP4k	Promote and retain mature trees and green corridors in public realm and new developments	Ongoing	Development Management	Planning Policy	Staff time	Meets objective 2 of Theme 4. Contributes to Water Framework Directive
BAP4l	Actively discourage the sale/purchase of LISI list plants in the Borough	Ongoing	Harrow in Leaf, HNCF	Biodiversity Officer	Staff time	Meets objective 3 of Theme 4. Feeds into London Invasive Species Initiative. Meets objectives of the Crane Valley Catchment Plan and Brent Catchment River Corridor Plan
Resource Dependent Actions						
BAP4m	River restoration including deculverting streams where appropriate. Control of invasive species and replanting with native species of local provenance	Ongoing	Harrow Pride, Traffic Highways and Asset Management, Biodiversity Officer	Brent Catchment Partnership, Crane Valley Partnership, adjoining boroughs	Staff time	Meets objective 3 of Theme 4. Feeds into London Invasive Species Initiative. Meets objectives of the Crane Valley Catchment Plan and Brent Catchment River Corridor Plan

3.13 Theme 5: Engaging with Nature

Theme 5 objectives:

1. **to increase engagement with people through biodiversity**
2. **to secure funding via partner organisations from external or internal grants to deliver the BAP**

Harrow is blessed when it comes to community action as a great deal of the biodiversity outreach work is provided by volunteer groups working in the community, particularly Harrow Nature Conservation Forum (HNCF) but also, Harrow Environmental Forum (HEF), Harrow Natural History Society (HNHS), Bentley Priory Nature Reserve Management Committee (BPNRMC), Friends of Bentley Priory Nature Reserve, Friends of Canons Park, and other groups and individuals.

Events such as site workdays, wildlife walks and talks and specialist species identification events are well attended in Harrow. HNCF have volunteer wardens which look after 8 Sites of Importance for Nature Conservation in the borough. HNHS run regular walks and talks throughout the year. HEF produce a newsletter that is distributed to the borough's schools. HNCF and BPNRMC have recently been awarded substantial funding from the Heritage Lottery Fund to increase the area of BAP habitat at Stanmore Common and Bentley Priory SSSI respectively, as well as undertaking outreach work as part of the projects. The Master Oak (the oldest tree in the borough) is being protected from damage by funds raised by The Friends of Bentley Priory Nature Reserve. Most of these organisations produce newsletters and have websites.

Work experience students soil testing at Bentley Priory SSSI (2014) – Photo: Simon Braidman

3.14 Actions for Engaging with Nature

Number	Action	Target Date	Lead Partner	Other Partners	Cost implications	Justification
Operational Actions						
BAP5a	Hold 10 weeks work experience course for GCSE/A Level students at Bentley Priory SSSI	2015	BPNRMC	HNCF Biodiversity Officer	HLF Funding	Meets Objective 1 of Theme 5
BAP5b	Advertise vacancy for a volunteer Assistant Conservation Warden at Bentley Priory SSSI in Harrow Times/observer, Environment Job and Countryside Jobs websites	2015	BPNRMC	HNCF Biodiversity Officer	HLF Funding	Meets Objective 1 of Theme 5
BAP5c	Build up volunteer base at Bentley Priory SSSI	2017	BPNRMC	HNCF		Meets Objective 1 of Theme 5
BAP5d	Develop funding strategy with the HNCF and where applicable other partners to secure external funding for SINCs and any themed actions requiring external grants and those which come to light over the operational period of the BAP	2017	HNCF, Biodiversity Officer	HBP	Staff time	Meets objective 2 of Theme 5
BAP5e	Set up management committee for Greater Stanmore Country Park	2015	HNCF, Harrow Council Community Engagement	Members Traffic Highways and Asset Management, Harrow Pride Biodiversity Officer	Staff time	Meets Objective 1 of Theme 5
BAP5g	Appoint and support volunteer warden for Wood Farm part of Greater Stanmore Country Park	2015	HNCF, Harrow Council Community Engagement	Biodiversity Officer	Staff time	Meets Objective 1 of Theme 5

Planning Actions						
BAP5h	Queensbury Recreation Ground: the local school (St Josephs) is keen to start using the new water feature for environmental education starting from the Spring.2015	2015	Traffic Highways and Asset Management Development Management, St Bernadette's Junior School, BCP	Harrow Pride	Staff time	Meets Objective 1 of Theme 5
BAP 5i	Recruit a volunteer Deputy Warden for Roxbourne Rough with an ecological bent who will concentrate on surveying the grassland to measure its biodiversity and helping maintain the biodiversity of the area	2016	HNCF, Harrow Council Community Engagement	Biodiversity Officer	Staff time	Meets Objective 1 of Theme 5
Resource Dependent Actions						
	HNCF to establish a working relationship with Harrow Weald Common Conservators with a view of assisting in the practical management of the Common. An aim would be to reverse the colonisation of the site by woodland in selected places and re-establish regionally uncommon acid grassland and heath – could involve the recruitment of up to 3 volunteer wardens who would contribute to the work of the Conservators.	2018	Harrow Weald Common Conservators, HNCF, Harrow Pride	Biodiversity Officer	Staff-time	Meets Objective 1 of Theme 5

3.15 Recording and Monitoring

In order to assess the effectiveness of this Biodiversity Action Plan there is a need to have up-to-date data on the species and habitats present within a given area which will act as a baseline from which change can be monitored. These data should give an indication of species frequency and distribution and the extent of habitats within the borough.

Similarly, to develop and deliver ecological strategies and policies there must be an awareness of what natural resources there are within the locality. This helps to prioritise, decide what to protect, and to indentify positive or negative changes to the distribution and types of species and habitats present in the borough.

Harrow Council has a Service Level Agreement with Greenspace Information for Greater London (GiGL). This is the biological recording centre for Greater London. Data from GiGL is used by the Council to inform planning policy and development control and to help produce reports required by Government. This is a two way information exchange with Harrow Council and its partners, providing records to GiGL from sites within the borough.

It is appreciated that Local Records Centres such as GiGL do not always have the resources to screen and comment on records submitted to them, and this can lead to a build-up of inaccurate records in a database. One frequently adopted response to this is to ensure that all records are also sent to the appropriate taxon recording scheme, either national- or London based. This helps ensure that not only are the records screened by an expert before they are entered into the national database (National Biodiversity Network (NBN)) (which are subsequently passed to LRCs such as GiGL), but also that the recording scheme organisers have the data they need to produce reliable and up-to-date atlases, articles, websites/blogs and reviews for specialist and non-specialist audiences. It is intended therefore that all Harrow data will also be submitted to the appropriate national or regional taxon recording scheme.

There are a number of volunteers in Harrow who are proficient at species identification and active within some of the borough's more important wildlife sites. There is a need however to encourage and engage more people to participate in wildlife recording. Wildlife records from volunteers can be sent to Harrow Nature Conservation Forum (admin@harrowncf.org) or to Harrow Council's Biodiversity Officer. These will be forwarded to GiGL.

Access will be arranged to the full GiGL database for HNCF (as agents of the Council which assist in the management of some of the borough's most important wildlife sites). The Council will train up to 4 members of HNCF in the retrieval of GiGL data at one of the Council's workstations, Arrangements will be made for HNCF to be able to use database in the Civic 1 building and work there for prearranged booked sessions.

Southern Wood Ant *Formica rufa* – Photo: Claire Abbot

3.16 Funding strategy

Some actions in the Plan might require additional funding. It is expected that this will become more apparent as the actions and projects progress. Table 9 (below) provides a list of funders and the current grants available. Harrow council and its partners will develop fundraising strategies and apply for funding as necessary. This list of course is subject to change and will be updated as necessary.

Countryside Jobs Service published an extensive list of potential funders: http://www.countryside-jobs.com/Information/Grants.htm

A list of grants available from Natural England is detailed here: http://www.naturalengland.org.uk/grantsfunding/findagrant/

IES list of potential funders for research, careers or projects in the environmental sciences https://www.ies-uk.org.uk/sites/default/files/reports/environmental_funding_streams_2014.pdf

Table 9: Funders of capital grants for conservation projects

Funder	Amount	What s funded	Website
Heritage Lottery Fund (HLF)	Your Heritage grant £3K to £100K Apply any time Larger Grants available See website for deadlines	Projects which focus on heritage, including: - natural and designed landscapes and gardens; - wildlife, including priority habitats and species	http://www.hlf.org.uk/HOWTOAPPLY/PROGRMMES/Pages/programmes.aspx
Awards for All	£300 to £10K	Aims to fund projects which address the issues, needs and aspirations of local communities and people. Fund a wide range of community projects aimed at developing skills, improving health, revitalising the local environment and enabling people to become more active citizens.	http://www.awardsforall.org.uk/
Big Lottery Fund	Up to £500K over 5 years	Encourages changes in communities via a renge of activities. Funds green causes throughout the UK, which work to improve their local environments and help fight climate change.	http://www.biglotteryfund.org.uk/
Section 106 monies	Unspecified	funding of specific measures/mitigations made necessary by a proposed development	
Community Infrastructure Levy (CIL)	Unspecified	Habitat Creation and improvement projects - particularly those identified as part of the Harrow Green Grid.	
Esme Fairburn Foundation	Maximum £250k Average grant £50K Will fund core costs.	The environment is one of four sectors open to funding. Projects must meet at least one of six priorities such as addressing a significant gap in provision, challenging convention developing or strengthening good	http://www.esmeefairbairn.org.uk/

		practice..	
Landfill Trusts	Average grant £25K but up to maximum of £100K	Environmental fund for community groups. Will fund creation and restoration of wildlife gardens.	http://www.biffa-award.org/rebuilding-biodiversity http://www.veoliatrust.org/funding/ http://www.veoliatrust.org/funding/
RE:LEAF Community Grant Scheme	Community grant scheme between £2,000 and £20,000 Requires match-funding	Grants for tree projects that deliver community benefits to amenity spaces and parks in Greater London.	http://www.groundwork.org.uk/Sites/london/pages/releaf
The Naturesave Trust	£100 to £10,000. The average grant size is around £2,000.	Supports environmental and conservationist groups in the UK. Grants are available to fund projects that deal with specific environmental and/or conservationist problems, and that encourage the greater commercial adoption of sustainable development.	www.naturesave.co.uk/trust_naturesave.html

3.17 Documents used in preparation of this BAP

European

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http://www.legislation.gov.uk/uksi/2010/490/contents/made

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EU Floods Directive 2007/60/EC
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060

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National

Natural Environment and Rural Communities Act 2006
http://www.legislation.gov.uk/ukpga/2006/16/contents

National Planning Policy Framework 2011
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

DCLG, The National Planning Policy Framework, Planning Practice Guidance - Natural Environment: Biodiversity, ecosystems and green infrastructure
http://planningguidance.planningportal.gov.uk/blog/guidance/natural-environment/biodiversity-ecosystems-and-green-infrastructure/

Wildlife and Countryside Act 1981 (as amended)
http://www.legislation.gov.uk/ukpga/1981/69

Countryside and Rights of Way Act 2000
http://www.legislation.gov.uk/ukpga/2000/37/contents

The Natural Environment White Paper 2011 (& updates)
https://www.gov.uk/government/publications/natural-environment-white-paper-implementation-updates

The Natural Choice: securing the value of nature 2011
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf

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

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Working with the grain of nature, The UK BAP
http://archive.defra.gov.uk/environment/biodiversity/documents/biostrategy.pdf

Flood & Water Management Act 2010
http://www.legislation.gov.uk/ukpga/2010/29/pdfs/ukpga_20100029_en.pdf

Flood Risk Regulations 2009
http://www.legislation.gov.uk/uksi/2009/3042/pdfs/uksi_20093042_en.pdf

River Basin Management Plan 2014
https://www.gov.uk/government/collections/river-basin-management-plans

Regional (London)

The Greater London Authority Act 1999
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https://www.london.gov.uk/priorities/planning/publications/the-london-plan

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Connecting with London's nature: The Mayor's Biodiversity Strategy 2002
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http://www.forestry.gov.uk/pdf/ltwf_full.pdf/$FILE/ltwf_full.pdf

Green Infrastructure & Open Environments: Preparing Borough Tree and Woodland Strategies (SPG) 2013
http://www.london.gov.uk/sites/default/files/SPG%20Tree%20and%20Woodland%20Strategies%20Feb-2013.pdf

Sustainable Design and Construction Guidance (SPG) 2014
https://www.london.gov.uk/sites/default/files/Sustainable%20Design%20%26%20Construction%20SPG.pdf

Working together for Wildlife, London Biodiversity Partnership
http://www.lbp.org.uk/index.htm

London Invasive Species Initiative ((LISI): Tackling invasive species together
http://londonisi.org.uk/

Local

Harrow Core Strategy 2012
http://www.harrow.gov.uk/homepage/40/local_development_plan

Harrow & Wealdstone Area Action Plan 2013
http://www.harrow.gov.uk/info/200074/planning/838/harrow_and_wealdstone_area_action_plan

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Ashley Godfrey Associates (in Association With Phil Back Associates)
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https://www.harrow.gov.uk/www2/documents/s104835/Climate%20Change%20-%20Appendix%20D.pdf

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http://www.cranevalley.org.uk/documents/catchment_plan_2013.pdf

Ancient wood-bank at Weald Wood, Old Redding complete with stubbed hornbeam *Carpinus betulus* – Photo: Denis Vickers

3.18 Abbreviations and Glossary

AAP	Area Action Plan
ALGG	All London Green Grid
ArcGIS	Geographic Information System (digital mapping)
BAP	Biodiversity Action Plan
BCP	Brent Catchment Partnership
BoCC	Birds of Conservation Concern
BPNRMC	Bentley Priory Nature Reserve Management Committee
BREEAM	Buildings Research Establishment Environmental Rating
BTO	British Trust for Ornithology
CfSH	Code for Sustainable Homes
CIL	Community Infrastructure Levy
CVP	Crane Valley Partnership
EA	Environment Agency
Ezytreev	An integrated software system for co-ordinating the management of Council trees
GI	Green Infrastructure
GiGL	Greenspace Information for Greater London
GSCPMC	Greater Stanmore Country Park Management Committee
ha	Hectare (10,000m^2) = 2.47 acres
HAP	Habitat Action Plan
HEF	Harrow Environmental Forum
HHT	Harrow Heritage Trust
HLF	Heritage Lottery Fund
HNCF	Harrow Nature Conservation Forum
HNHS	Harrow Natural History Society
INNS	Invasive Non-Native species
LBH	London Borough of Harrow
LISI	London Invasive Species Initiative
LNR	Local Nature Reserve
LRC	Local Records Centre
LWT	London Wildlife Trust
NBN	National Biodiversity Network
NERC	Natural Environment and Rural Communities Act 2006 (as amended)
RNOH	Royal National Orthopaedic Hospital
S106	Planning gain money available under Section 106 of the Town & Country Planning Act 1990 (as amended)
SAP	Species Action Plan
SINC	Site of Importance for Nature Conservation
SLA	Service Level Agreement
SPG	Supplementary Planning Guidance
SSSI	Site of Special Scientific Interest
SuDS	Sustainable urban Drainage Scheme
WFD	Water Framework Directive
WLMP	Water Level Management Plan