

4.0 How are we going to Conserve and increase Biodiversity in Bromley

4.1 What can you do?

We encourage you to join in as part of the Bromley Biodiversity Partnership! Can you help implement the BBAP by:

- carrying out positive management work on land under your influence or control, such as council parks, grounds of business premises, horse paddocks or back gardens?
- volunteering to help with practical conservation tasks?
- providing expert advice for land managers?
- lobbying for changes in agriculture, transport, forestry and the market place in general to persuade people to consider biodiversity?
- participating in monitoring projects and surveys to provide additional information for the BBAP?
- providing existing records of species?
- enjoying biodiversity by visiting wildlife-rich areas and encouraging others to do the same?
- learning more about biodiversity through events and other means and inspiring others to take an interest too?
- publicising work towards the BBAP and encouraging others to take part?
- Highlighting good examples of biodiversity work so that participants receive recognition?

Further ideas may be found at www.bromleybiodiversity.co.uk

4.2 General Actions for Biodiversity in Bromley

How are we going to conserve and increase biodiversity in Bromley? What are the best ways in which this can be achieved? How can we encourage everyone to be involved?

There are a number of general actions that may be applied to all habitats and species in the Borough as part of the BBAP. These common strands are identified here under the headings:

- Policy
- Land and Species Management
- Advice, Publicity & Education
- Monitoring & Research

Policy	
Key Aspects	Detail and Specific Action
Promote and support implementation of the UK Biodiversity Action Plan and contribute to revisions.	<ul style="list-style-type: none"> • Through the implementation of the local biodiversity action plan, where relevant (BBAP). • Providing comments on revisions. • Disseminating information about the UK Plan. • Contribute case studies highlighting good practice for reports.
Promote and support implementation of countrywide and regional biodiversity strategies and contribute to revisions.	<ul style="list-style-type: none"> • Through the implementation of the local biodiversity action plan (BBAP). • Providing comments on revisions. • Disseminating information about the England Biodiversity Strategy 'Working with the Grain of Nature' and Mayor's Biodiversity Strategy 'Connecting with London's Nature'. • Contribute case studies highlighting good practice for reports.
Promote and support the London Biodiversity Partnership	<ul style="list-style-type: none"> • Through a Memorandum of Agreement. • Supporting the London Biodiversity Project Board. • Attending the London Borough Biodiversity Forum. • Attending and keeping up to date with actions of relevant Working Groups. • Implementing actions outlined in the London Biodiversity Action Plan as appropriate. • Contributing to annual reports, including examples of good practice. • Contributing to revisions of the London Biodiversity Action Plan. • Support the LBP Business Plan and the seeking of funding for generic actions, Habitat Action Plans, Species Action Plans and pan-London initiatives.
Build partnerships with organisations and Boroughs with similar concerns through joint initiatives, projects and campaigns.	<ul style="list-style-type: none"> • Through the London Biodiversity Partnership. • Through established agreements (eg. Kent Downs AONB Joint Project Board). • With specific partners for specific short- or long- term projects (eg. SUN Project).

<p>Ensure a coordinated approach for biodiversity within the London Borough of Bromley.</p>	<ul style="list-style-type: none"> • Ensure BBAP remains relevant through fresh discussion, new ideas and updates and a key means of delivering sustainable development. (eg. write new Species Action Plans at review stages). • Through the role of the Bromley Biodiversity Steering Group, involving a range of representatives and chaired by the London Borough of Bromley; promote the Partnership as the key point of contact locally. • Engage a wider audience through projects and a Bromley Forum event, held annually where possible (with particular effort towards targeting under-represented stakeholders). • Arrange regular meetings of habitat and species Action Groups (where relevant) and maintain leads for overseeing action taken for remaining action plans. • Hold meetings of the Recording Action Group. • Hold special meetings as directed by Steering Group (eg. Communications meetings on an annual basis). • Ensure BBAP is accessible (full version and leaflet version), so that objectives and actions are apparent. • Provide clear direction on how stakeholders can help and who to contact.
<p>Strive towards the overarching aim and objectives of the existing BBAP and it's visions.</p>	<ul style="list-style-type: none"> • By involving a range of stakeholders in the implementation of the BBAP and as part of stakeholder workshops, especially under-represented individuals and groups. • Through the implementation of the generic actions, habitat action plans (HAPs) and species action plans (SAPs).
<p>Seek and secure funding to support the implementation of actions outlined under the BBAP.</p>	<ul style="list-style-type: none"> • Through sponsorship, grant schemes, grant-funding bodies, joint partner funding, donations etc.
<p>Encourage the adoption and contribution towards the (implementation of) BBAP by a wide range of organisations and individuals.</p>	<ul style="list-style-type: none"> • Encourage key organisations and businesses to include support and active implementation for the BBAP as part of their remit (eg. constitution, strategies) and promote this to their membership. Make reference to BBAP in all relevant constitutions, documents etc. • Encourage personal effort by residents of the Borough towards a common goal; highlight contributions each person can make by providing clear suggestions.
<p>Devise and actively pursue novel ways to engage people's interest and involvement.</p>	<ul style="list-style-type: none"> • Through the 10 tasks of the SUN Project, including all eleven Task 6 implementation projects. • Investigate submission of a similar bid that develops principles further.

<p>Comply with, implement, support, promote and influence documents that impact on biodiversity (eg. legislation, regulations, planning legislation and guidance, national and regional initiatives and strategies, good practice procedures).</p>	<ul style="list-style-type: none"> • Lobby for changes in agriculture, transport, forestry, land use and the market place in general to persuade people to consider biodiversity (eg. England Rural Development Programme, Mayor's Spatial Strategy, Unitary Development Plan). • Update existing land use policies in the London Borough of Bromley according to Government guidance (Local Development Framework).
<p>Safeguard existing designated sites of landscape and wildlife value and seek designation of further areas, including amendment to boundaries.</p>	<ul style="list-style-type: none"> • Including: Sites of Special Scientific Interest; Sites of Importance for Nature Conservation; Local Nature Reserves; Kent Downs Area of Outstanding Natural Beauty etc.
<p>Ensure that biodiversity continues to be a core element of the Borough's strategies.</p>	<ul style="list-style-type: none"> • Influence and promote strategies, including those in relation to sustainability (eg. Community Strategy). • Produce and update strategies that specifically focus on semi-natural habitats in the Borough (eg. hedgerow and verge strategy).
<p>Assess the impact of development on urban and rural biodiversity and secure benefits and opportunities.</p>	<ul style="list-style-type: none"> • Through appropriate surveys, determinations, conditions and Section 106 agreements.
<p>Seek designation of the proposed World Heritage Site (Darwin's Home & Workplace) and implement the management plan for the area</p>	<ul style="list-style-type: none"> • Ensure biodiversity elements of the WHS Management Plan contribute to the BBAP and vice versa; ongoing. • Submit bid to UNESCO in February 2006.
<p>Endeavour to bring biodiversity to the forefront of the minds of decision makers.</p>	<ul style="list-style-type: none"> • Including: Members of Parliament; Mayor and Members of Greater London Authority; Portfolio Holders; Ward Councillors; Chief Executives/chairs of local and regional organisations; quangos/statutory regulators. • Ongoing through annual reporting, site visits, communications etc.

Land & Species Management	
Integrate the needs of biodiversity in management actions wherever possible	<ul style="list-style-type: none"> • Carry out positive management work on land under influence or control on Council-owned and privately-owned sites (eg. parks, school grounds, business premises, horse paddocks, back gardens) • Increase opportunity for habitats and species, minimise threat, promote flagship species and limit negative indicator species • Maintain database of ownership and management details of SINC's. • Ensure biodiversity conservation objectives are incorporated in management plans, briefing statements etc. • Allow available survey work to inform management taken.
Actively promote uptake of grants for habitat creation and management and maintain existing grant agreements.	<ul style="list-style-type: none"> • Environmental Stewardship, England Woodland Grant Scheme, Wildlife Enhancement Scheme etc.
Organise and facilitate practical conservation tasks to enhance biodiversity.	<ul style="list-style-type: none"> • Through Council-run projects, wildlife-organisation projects, community-led action etc. • Support existing voluntary and community action, and expand where possible.
Provide advice and assistance to private farmers and landowners.	<ul style="list-style-type: none"> • Through the Council's Countryside Management Service; Rural Development Service; Forestry Authority etc. • Through Bromley Knowledge (and links to other websites) and publications.
Ensure targeted effort, to compliment land and species management actions.	<ul style="list-style-type: none"> • Identify areas, sites and species to support the BBAP and be guided by relevant strategic documents (eg. Landscape Assessment of the Green Belt, Natural Areas, Kent Downs AONB Landscape Assessment) and newly devised approaches (eg. Grasslands Strategy, identification of key 'corridors'). • Implement the UK and London BAP where appropriate.
Ensure reptiles are promoted and considered through relevant HAPs and SAPs, to support the London Biodiversity Action Plan.	<ul style="list-style-type: none"> • Ongoing. • Undertake management that helps to support key populations. • Implement relevant actions of the LBP Reptile Working Group.

Advice, Publicity & Education

<p>Implement a communications strategy/approach to secure a high profile for the BBAP</p>	<ul style="list-style-type: none"> • Partnership to identify and coordinate key joint opportunities for BAP publicity (suitable venues, contacts etc.) • Ensure all take responsibility and opportunity to promote the BBAP effectively and frequently (where relevant and appropriate). • All partners to direct people to BBAP webpages, where appropriate, as key source of information; full BBAP to appear on web, hard copies for reference at key sites (eg. libraries). • Promote work contributing towards the Bromley Biodiversity Action Plan using a recognised 'logo' for use on relevant publications, at events etc. • Monitor coverage (press clippings, newsletter articles, location of displays etc).
<p>Raise awareness of Bromley's biodiversity, ensure availability of information and encourage active participation.</p>	<ul style="list-style-type: none"> • Through walks, talks, events to the public or individual groups organised by the Council, environmental organisations, local experts etc. • Through interpretation, publicity, leaflets, newsletters, letters, radio, television, articles etc. • By Council, environmental organisations, local experts etc. • Continue to distribute BBAP leaflet. • Produce and circulate displays relating to Bromley's biodiversity. • Market 'What you can do' via websites and promotional material and encourage feedback to the Partnership where appropriate. • Promote enjoyment of parks, open spaces, Local Nature Reserves and the wider countryside. • Through 'on site' temporary notice boards (eg. alongside volunteers at work on practical projects) and displays at local events etc • Provide biodiversity information (eg. BBAP document, guidance notes, progress towards targets events, features, volunteer projects, annual reports) on Bromley Knowledge and through websites run by other stakeholders. • Ensure BBAP web pages refreshing and vibrant. • Devise and implement novel ways of marketing biodiversity and people's involvement (e.g Bus stops, cinema magazines etc.) • Promote WHS through the Darwin at Downe website. • Promote access to SINC's, as applicable, through GLA website. • Promoted guided trails promoting biodiversity. • Promote places to visit through Bromley Knowledge and through transport publications and notice boards. • Through 'campaigns' (eg. Greening Bromley's Gardens, Bromley's Wetland Campaign).

<p>Develop and support environmental education initiatives and facilities.</p>	<ul style="list-style-type: none"> • Through High Elms Nature Centre, Scadbury Field Studies Centre, the Darwin Forum, youth groups and camp sites, adult learning etc. • Promote educational material, including local packs (Eg. Green Chain Education Pack webpages). • Consider the production of an video promoting Bromley's biodiversity issues, for children and adults through schools and libraries.
<p>Providing expert advice for land managers developers and professionals.</p>	<ul style="list-style-type: none"> • For and within the Council. • Provide advice for private landowners, developers, landscape architects, building contractors, Council officers, farmers, householders etc. • On-site, through Bromley Knowledge, disseminating publications with guidelines etc.
<p>Recognise effort undertaken for the benefit of biodiversity.</p>	<ul style="list-style-type: none"> • Support the annual 'Bromley Environmental Awards' and secure representation of a judge with biodiversity knowledge. • Promote through Charter marks, London in Bloom etc. • Promotes examples of good practice locally and more widely through press coverage, articles in publications, professional journals, websites.
<p>Support the marketing of locally produced, sustainable countryside products.</p>	<ul style="list-style-type: none"> • Including timber, compost, organic produce etc.
<p>Engage in joint publicity and campaigns, which cut across organisational and administrative boundaries.</p>	<ul style="list-style-type: none"> • Ongoing (eg. The Darwin (Youth) Challenge).
<p>Promote high-profile funding partnerships with organisations and businesses.</p>	<ul style="list-style-type: none"> • The SUN Project, 'London' Heathland Heritage' etc.
<p>Share experiences with other areas and organisations within and outside London.</p>	<ul style="list-style-type: none"> • Through networking, conferences, articles, exchange fairs etc.

Monitoring & Research	
Support training for and involvement in wildlife survey initiatives.	<ul style="list-style-type: none"> • Organise appropriate training at various levels, including licensed surveyors (for staff, targeted groups, general public etc.) • Provide clear advice on survey techniques, information on where records are to be sent and feedback on collated results. • Highlight selected species for recording on Bromley Knowledge and make provision for submitting records as part of SUN Project (eg. reptiles) • Promote surveys via press and publications. • Especially encourage schools to become involved. • Encourage and support recording by 'amateur naturalists' and professionals. • Hold 'Recording Action Group' meetings.
Undertake, encourage and support, where possible, detailed monitoring and research projects relevant to Bromley's biodiversity.	<ul style="list-style-type: none"> • Support pupil projects, student (including PhD) dissertations. • Support and participate in the undertaking of studies undertaken by organisations and statutory bodies. • Update and undertake comparative analysis of Phase 1 Habitat surveys by 2009. • Undertake NVC surveys; selected SINC's by 2009.
Collate existing and new data and promote exchange of data, where appropriate.	<ul style="list-style-type: none"> • Input on the Council's Geographic Information System (map based data that can be linked to habitat and species surveys, management plans, historical records and photographs etc) • Input records on 'RECORDER', (a species and habitat database). • Support Greenspace Information for Greater London (GIGL) and maintain agreement with GIGL on collation and dissemination of records. • Submit records to and receive records from relevant organisations (including national monitoring schemes and regional surveys) and non-London biological recording centres where appropriate.
Evaluate records in order that action plans for the Borough's habitats and species are effective and targeted.	<ul style="list-style-type: none"> • Through the role of the Action Groups and as part of BBAP reviews.
Keep up-to-date with research and survey data relevant to Bromley and obtained by other organisations.	<ul style="list-style-type: none"> • Source information from relevant publications, press articles and web sites. • Mayor's State of the Countryside Report produced in 2007.
Undertake ecological research in proposed WHS (various) and hold meetings of WHS Biodiversity Group.	<ul style="list-style-type: none"> • To support implementation of the proposed WHS management plan.

<p>Monitor progress and the effects of action undertaken through BBAP and disseminate.</p>	<ul style="list-style-type: none">• Trained persons to submit information to the Biodiversity Action Reporting System (BARS).• Produce annual report and promote to Environment Portfolio holder, local groups and the wider public.• Use information to help with the BBAP review process.• Incorporate action and data into the London Biodiversity Action Plan.
--	---

4.3 Action Plans for Key Habitats

WOODLAND

“The first period of vegetation, and the banks are clothes with pale blue violets to an extent I have never seen equalled and with primroses a few days later some of the copses were brilliantly enlivened by wood anemones and white Stellaria. Again subsequently, large areas were brilliantly blue with bluebells.” (Charles Darwin).

Woodlands are an important element in the natural environment of the Borough. They provide opportunities for recreation, are a valued component of the landscape, an essential habitat for wildlife, provide employment, contribute to the supply of timber and are an effective means of absorbing carbon dioxide from the atmosphere. Much woodland is identified as being ‘ancient woodland’ (that which has been in existence since at least 1600); they are described as ‘semi-natural’ because the woodlands have received past management. They represent the most important woodland habitats for wildlife, sometimes containing species of national rarity. The majority of woods are comprised of broad-leaved species, although some coniferous plantations exist. The Great Storm of 1987 had a widespread impact on trees and woodlands throughout the Borough; it also brought many benefits, including a profusion of deadwood habitat. Public attention has rarely been directed towards trees and woodlands as much as it has since then.

VISION: To sympathetically manage all ancient semi-natural woodlands, over one third of London’s total, and to care for species important to Bromley, including wood anemone, dormouse and fungi. We want to promote people’s love of woodlands.

AIMS:

- *To protect woodlands and trees which are of landscape, wildlife and historic interest.*
- *To encourage the conservation and sympathetic management of the Borough’s woodlands, and where possible increase their sustainable economic use.*
- *To encourage the planting of trees and the establishment of new woodlands in appropriate locations.*
- *To promote a greater interest and enjoyment of woodlands by the public.*

1. Current Status

1.1 Area & Distribution

No lower limit has been suggested on how small a ‘wood’ can be; the Woodland Grant Scheme, run by the Forestry Authority, sets its lower limit for grant applications at 0.25ha. The LBP highlights that a few trees can be considered a wood in inner London Boroughs.

Britain is one of the least wooded countries within Europe; approximately 7% of the UK’s land cover is woodland. Ancient semi-natural broad-leaved and yew woodland, only covers about 1% of the land surface of Britain. Broadleaves, mixed and yew woodland is estimated at covering 7300ha or 4.5% of Greater London and may include ancient semi-natural woodland, new plantations, carr, secondary woodland and mature scrub (estimated as covering an additional 3.7%). The range of vegetation found in London’s woodland is most largely naturally influenced by climate. They cannot all be easily placed under National Vegetation Classification descriptions. However, seven key types of woodland and scrub types are identified in the LBP (2000). Bromley is fortunate in containing around one third of London’s ancient woodlands. Nearly a quarter of Bromley’s Green Belt is wooded.

Many of Bromley's woodlands have ancient origins, being remnants of old landscapes. Other woodlands were created or adapted to satisfy the formal landscaping desired by large estates or houses on the outskirts of London (eg. High Elms). These are often characterised by large ornamental trees such as Cedars or Planes. Some commercial coniferous plantations exist and these mostly date from just after the First World War although some are more recent (eg. Ruxley Woods). These conifers often replaced broadleaved woodland and the woodland floor and banks can retain the original ground flora, which can sometimes recover when the conifers are felled.

Coppiced woodlands are common in the area and provide many opportunities for wildlife, but some remain neglected. Up until the 20th Century, they were some of the most productive of Bromley's broad-leaved woodland, where coppice stools were cut on a regular rotation (usually 10-15 years) to provide long straight poles. Commonly the coppiced trees were sweet chestnut or hazel but may also include ash, hornbeam, alder, beech and oak. The long poles were used for a variety of purposes; in the case of sweet chestnut, hop poles were an important market. There are many examples of coppiced woodland, including Spring Park and Well Wood.

In the north of the Borough are woodlands containing pollarded hornbeam trees, that may well have been regularly harvested to provide fuel logs for London homes. Many of these woods now require management to retain their fine pollarded trees. The pollarding of trees is a traditional method of management, which comprises the regular cutting of the branches back to the trunk of the tree, and at a height of about 2.5m above ground level. This was usually done on a regular cycle of about 15 years.

The estimated total of wet woodland in the UK is 70,000ha. In Bromley, narrow strips of wet woodland or 'carr' exist mainly along riversides retaining semi-natural features. At Ruxley Lakes, willow and alder form the key components of this woodland-type, as soil remains waterlogged for much of the year.

1.2 Trends

'Wildwood' covered Britain after the Ice Age. Climate change and human interference has developed the wooded landscape we see today. Undoubtedly there has been significant, accelerated loss in recent centuries. Woodland, however, continues to develop. The 1987 Great Storm had a significant impact in the locality on woodland trees; management on privately-owned woodland sites was promoted by the Countryside Management Service. New woodland grows up alongside railways; trees regenerate on cleared land (through natural succession); areas of chalk grassland have become scrubbed over since the last World War. These emerging new 'secondary' woodlands are often dominated by ash and maple (including Norway maple and sycamore). They now make a significant impact upon the Borough's landscape. In other areas, where acidic soils on sands and gravels dominate, the secondary woodland comprises birch and oak. Climate change is likely to bring about a shift in the species composition of woodland and put some species in isolated woodland at particular risk. Demand for planting of community woodlands is also on the increase, and will, to some extent, help to build vital connections. The designation of 3700ha of woodland as Sites of Metropolitan Importance in London, indicates the high wildlife value and regard in which woodland is held.

Demand for woodland products has always had a major influence on the nature and management of woodland. During the Second World War many of the woodlands on the Downs were systematically worked for any usable timber. This was harvested by the forestry equivalent of the Land Army. Many woodlands still bear the 'scars' of this work, which was often guided by the emergency of the time, rather than with thought for the future. It is important that after the timber has been grown and

harvested, a market exists for the product. Many of the traditional markets for timber have or are currently disappearing. Fall in timber price has reduced the economic viability of most forest enterprises. This has an impact on the funding of management activity for biodiversity or other non-market benefits. `New' products and outlets must be developed where timber continues to provide a secondary income.

Whilst production has changed, there is still a demand for wood eg. firewood, signposts. Bromley-grown timber is used for Council-run projects within the Borough. Trees harvested from Bromley's woodlands provide some good quality timber, which tends to go to local sawmills. The majority of timber from the Borough is hardwood, although some of the coniferous plantations are now producing crops of softwood. Unexpected discoveries, such as shrapnel in trees adjacent to Biggin Hill airfield, have made them unsuitable for the sawmill.

There remains a need for woodland owners to think about and plan for woodland in the long-term. The predominance of older age classes, which are susceptible to drought and storm damage (eg. beech), is an issue for many woodlands; to rectify these there is a trend towards relying on natural regeneration rather than tree planting. A number of tree species are beginning to show signs of disease, including ash, oak and alder. Hot summers are also affecting the longevity of some trees.

The England Forestry Strategy (1999) has key programmes set out. The Forestry Commission support for the sustainable management of existing woodland in England subsequently underwent a review and published its response to the recommendations of the Review Steering Group in October 2002. Grant schemes provide the mechanisms for delivering the targets which have landscape-scale benefits and which support health and flood management, contributing to quality of life. Based on the take-up of grant schemes, half the area of woodland in England is currently under active management. A review of grants was undertaken during 2004-5. The English Woodland Grant Scheme (EWGS) includes the Woodland Planning Grant, Assessment Grant, Regeneration Grant, Creation Grant, Woodland Improvement Grant and Woodland Management Grant. The aims of the EWGA are to sustain and increase the public benefits given by existing woodlands; to help create new woodlands to deliver additional public benefit. Regional approaches have also been developed as a new approach and described in Prospectuses.

It could be argued that woodlands are better protected than a number of other habitats, through felling licences and the planning system. However, secondary woodland remains the most susceptible to loss. The natural and cultural heritage associated with woodlands means that their loss generates significant interest from people. Their popularity is evident where trees or woodland are perceived to be threatened, even when sympathetic conservation management is taking place.

Tree planting has caused harm to some areas of nature conservation, as trees can shade out other valuable plant communities. New woodland planting should therefore be encouraged only after sufficient information is available about existing plant communities. The undergrowth in some woodland is being smothered by introduced species such as rhododendron and laurel. This shades out native flora and prevents regeneration of woodland trees.

Woodlands are popular for walking, playing and educational purposes. There is therefore some risk of erosion, compaction, and damage to vegetation and disturbance to wildlife. Whilst permitting access, measures are taken by a number of woodland owners to contain damage. Other damage which occurs includes overgrazing and eutrophication from agricultural activities on adjoining land.

Sightings of deer have increased in Bromley since the early 1990s. Though deer grazing helps with glade management, a significant increase in numbers may have an affect on woodland regeneration.

Rabbit grazing affects coppice regrowth and ground flora in some areas. Squirrels' stripping of bark on established trees can cause their early demise.

The recognised importance of habitat mosaics and tree species diversity in woodland has led to additional planting and management which takes this into account. Woodland commons, pasture and parkland, most common in southern Britain, traditionally comprises of a matrix of grassland and woodland flora; the extent of this resource is uncertain but there is likely to be current loss or degradation (Strategy 2001).

Traditional management practices such as coppicing, are often sympathetic to wildlife. The impact of management should be assessed by means of regular site surveys, however in most cases general management principles guides the appropriateness of operations for biodiversity.

A large number of old pollards and coppice stools occur in Bromley's woodlands. Though individual trees are impressive, they are also vulnerable due to lack of management. Sensitive management techniques must be adopted. Deadwood and its possible implications for public safety have led to an enthusiasm for clearance in the past. In more recent years, its importance for invertebrates, bats and birds has been recognised and more sensitive treatment of aging trees has been taken.

Elm loss has caused structural and species change in woodland. New diseases threaten oak and ash. In time, there may be a decline in alder trees through the spread of a fungal disease, which first became apparent in Kent in the 1990s.

Wet woodland has a dense structure with fallen trees, difficult ground conditions and biting insects and therefore is more difficult for the public to enjoy. The clearance of river embankments and the loss of natural landform have led to a reduction in the abundance of carr (wet woodland). The species composition of carr communities is dependant on high humidity and high water levels. They are threatened by changes in water regime, succession to drier habitat, poor water quality, including toxic water pollutants, and traditional clearance of ponds to prevent succession.

English Nature published 'Long-term Ecological Change in British Woodland 1971-2001' during 2005, including a resurvey of 103 woods to help identify drivers of change. Climate change and eutrophication were just two of the factors identified.

2 Current factors affecting the habitat

- a) Fragmentation of woodland, leaving isolated remnants.
- b) Inappropriate management.
- c) Loss of woodland to development or conversion of wood and scrub to other land uses.
- d) Replacement with non-native trees.
- e) Invasion of non-native species (eg. rhododendron, sycamore, Norway maple)
- f) Illegal picking of fungi and flora.
- g) Effects of climate change.
- g) Tree diseases
- h) Grazing and browsing damage (eg. squirrels) including encroachment of livestock.
- i) Dumping, vandalism and arson
- j) Planting in the wrong place (eg. unsuitable soil conditions, detracting from nature conservation value).
- k) Desire for more trees and new woodland planting.
- l) Loss of deadwood through felling and 'tidying-up'

- m) Lack of money, resources and desire to manage woodlands.
- n) Sympathetic recreational opportunities.
- o) Pollution from traffic, industry, agricultural chemicals affecting ground flora and epiphytes.

3 Current Action

3.1 Protection

Several woods are of particularly high wildlife interest and designated as Sites of Special Scientific Interest by English Nature (eg. High Elms, Crofton Woods). Many others are designated as Sites of Importance for Nature Conservation (eg. New Years Wood) or Local Nature Reserves (eg. Scadbury Park).

Many woodlands are covered by Tree Preservation Orders. Felling licence regulations provide the Forestry Commission with some control.

Numerous specific policies relating to trees exist in the UDP.

3.2 Management

Forestry Practice Guidelines (Forestry Authority) for the management of Lowland Beech-Ash, Lowland Mixed Broadleaved and Wet Woodland were published in the mid-1990s. The England Biodiversity Strategy for Woodland and Forestry (October 2001) sets out detailed objectives for woodlands in England. Eight native woodland HAPs, covering 350, 000ha, are part of the UK BAP. A Woodland Working Group contributes to the London Biodiversity Partnership.

The London Borough of Bromley produced Woodland and Indicative Forestry Strategy, 'Bromley's Woodland Future' in 1994. The strategy provides the basic framework for the protection, conservation and management of the Borough's trees and woodlands, it also seeks to raise public awareness and encourage new planting. A review of the document will be undertaken during the 3rd Edition BBAP.

The majority of woodlands in the Borough are privately owned. Few are managed purely for their commercial value. Most are managed on an estate woodland basis, although some are small farm woodlands. Reasons for management vary and include pheasant rearing. The Countryside Management Service gives advice and assistance to private landowners, also promoting grants. Since the introduction of the BBAP, it has managed or given advice on around 40ha of privately-owned woodland. Often wood derived from management is used by the landowner or by the CMS for habitat management on other sites. A 'portable' charcoal-burner is used on woodland sites to make use of off-cuts of timber. Deadwood or brash habitat piles' are created on site following woodland management.

Bromley Council owns around 450ha of publicly accessible woodland, which are managed with nature conservation and amenity use as the main priorities (eg. Padmall Wood, Scadbury Park, Hayes and Keston Commons, High Elms Estate). A number of new woodland areas have been established, including Elmfield and Lilly's Wood. A number of Friends groups, including those set up under the Wildspace! Project, involves local communities in woodland management.

Trampling, eutrophication and clearance of shrub to improve sightline have some affect on a number of woodlands. A number of woodlands are publicly accessible (eg. Well Wood), though often users are encouraged to remain on established paths. The majority of private woodlands are not accessible except along Rights of Way, though there are some exceptions, including Blackbush Shaw and sites

with limited access (eg. scout and guide camps). Campaigns can help to secure new woodlands for the public, including Blackbush Shaw by the Woodland Trust, and supported by the CMS.

Woodlands feature regularly in walks, talks and events run by the Council. Events & fairs in the Borough often incorporate demonstrations of traditional timber products. Timber sales are also held at High Elms Country Park. Standards for sustainable forestry is promoted by the Forestry Commission. The planting of trees of local provenance (based on devised regions) is encouraged.

Bat, dormouse, butterfly and bird surveys (eg. Hoblingwell Wood 30 year survey) in woodlands are helping us find out more about the value of local woodlands. Artificial boxes have been erected to support populations (eg. Chislehurst Common).

The London Biodiversity Partnership are working towards the Capital Woodlands HLF funded project to promote flagship sites across London demonstrating good practice (eg. Scadbury Park), and the development of pan-London initiatives (eg. coordination of training opportunities and activities). A Trees & Woodland Framework for London was published by the GLA in 2005. This will help foster further collaborative effort across London to meet issues raised.

4 Key Species (not exclusive)

Flagship Species:

All ancient woodland indicator plants (eg. bluebell, opposite leaved golden saxifrage, wood sorrel, moschatel, goldilocks, wood anemone), common dormouse, fungi, invertebrates, bats, ancient trees, pedunculate oak, sessile oak, beech, ash, hazel, field maple, alder, small-leaved lime, wild service tree, hornbeam, epiphytes (mosses, liverworts and lichens), deadwood, badgers, stag beetle, green woodpecker, greater spotted woodpecker, lesser spotted woodpecker, tree creeper, nuthatch, song thrush, bullfinch, turtle dove, spotted flycatcher, marsh tit, willow tit, tawny owl, butterflies (eg. speckled wood), yellow birds nest orchid, early purple orchid, yellow-necked mouse, speckled wood butterfly.

Negative Indicators:

Sycamore, Norway maple, Japanese knotweed, rhododendron, cherry laurel, spotted laurel.

5 Proposed Specific Action

Actions	Targets
Woodland Policy & Strategy	
1 Support actions of the UK BAP, England Biodiversity Strategy for Woodlands and Forestry and the London BAP as well as London Trees and Woodlands Framework.	1a Ongoing 1b Contribute to and support the 'Capital Woodlands' HLF bid and implement pan-London and demonstration site elements of the project, if successful.
2 Ensure important woodlands of significant amenity value over 1Ha are protected under TPOs	2a Ongoing on case by case basis.
3 Promote Bromley's Woodland (Indicative Forestry) Strategy	3a Ongoing. 3b Update by 2008; identify specific

<p>4 Promote use and purchase of timber certified as originating from a sustainable source, where possible, within the Council.</p> <p>5 Seek opportunities for woodland surveys, planting, enhancement, acquisition and access within the planning process.</p> <p>6 Attend and contribute towards the work of the Woodland Working Group (LBP).</p> <p>7 Ensure continued input into London Tree Officers Association.</p> <p>8 Hold meetings of the Woodland & Ancient Tree Working Group.</p>	<p>opportunities for linking existing woodland areas through new planting and set targets to supplement Strategy.</p> <p>3c. Publicise via Bromley Knowledge website, encouraging woodland management and the establishment of woodland, via articles(at least once by 2009) and workshops (at least one by 2009).</p> <p>4a Promote local code of practice and seek use of local timber in contracts; ongoing.</p> <p>5a Ongoing.</p> <p>6a Ongoing; share information and build on existing expertise and implement action.</p> <p>7a Ongoing.</p> <p>8a Ongoing</p>
Woodland Management & Creation	
<p>9 Produce management plans for all council-owned woodlands</p> <p>10 Produce management plans for privately owned, ancient, semi-natural woodlands.</p> <p>11 Actively coppice woodland on private or Council-owned land.</p> <p>12 Promote sustainable use of site-derived timber, especially on Council-owned land.</p> <p>13 Introduce protective measures where significant grazing or browsing occurs.</p> <p>14 Promote natural regeneration of ancient semi-natural woodlands through appropriate management; plant native trees if necessary, using local provenance tree nurseries.</p> <p>15 Ensure deadwood is adequately represented in woodland management plans.</p>	<p>9a Woodland management plans on council-owned land to be reviewed by 2009.</p> <p>9b Devise management plans for all sites in the proposed WHS; ongoing, by 2009.</p> <p>10a Ongoing; at least 3 management plans by 2009, with particular focus on SMIs.</p> <p>11a According to management plans; 2 hectares by 2009.</p> <p>12a Ongoing; every management plan to mention use of timber.</p> <p>13b Produce a guidance note by 2007 and promote via Bromley Knowledge.</p> <p>14a Natural regeneration to be considered first in all management plans before planting is considered; ongoing.</p> <p>14b Develop a tree nursery at Scadbury, to nurture collected seeds and young seedlings, for planting at Scadbury and other sites (eg. schools, allotments).</p> <p>15a Ongoing for dead/dying trees and non-standing deadwood, with special consideration given to creating stag beetle loggeries (Link to Stag Beetle SAP) and bat roosts (Link to Bat SAP).</p>

<p>16 Create new woodlands in accordance with the Indicative Forestry Strategy and planting guidance.</p> <p>17 Fell inappropriate conifers in ancient woodland sites, subject to appropriate consents, in order to diversify and restructure plantations.</p> <p>18 Consider ancient trees as part of woodland management plans</p> <p>19 Provide buffer zones for woodland from damaging effects on adjacent management compartment or land owned by others.</p>	<p>15b Provide general guidance on Bromley Knowledge, balancing health& safety with wildlife value.</p> <p>16a 2 ha of new trees planted by 2009</p> <p>17a Ongoing as part of management plans; initiate management in at least one ancient woodland with conifers by 2009.</p> <p>18a See 'Ancient Trees' SAP.</p> <p>19a Ongoing.</p> <p>19b Promote and maintain headlands etc. on farmland; target at least 3 areas alongside Council-owned woodland by 2009.</p>
<p>Woodland Advisory</p>	
<p>20 Provide the public with a webpage to increase awareness of Bromley's woodlands, their management and the activities with which they can become involved.</p> <p>21 Promote the England Woodland Grant Scheme to all private owners with woodland by 2009.</p> <p>22 Ensure that woodland managers have sufficient information on good practice management and tree-planting for the woodland habitat and its species.</p> <p>23 Direct landowners to advice on production, use and local marketing of woodland products and sustainable timber; support efforts to increase the sustainable, economic use of woodland in London.</p>	<p>20a Ongoing; update as appropriate.</p> <p>20b Promote via 'Capital Woodlands'</p> <p>21a Through workshop (at least one by 2009, linking with Farmland HAP)</p> <p>21b Ongoing through mail outs, articles and Bromley Knowledge.</p> <p>22a Ongoing on-site advice to private-landowners.</p> <p>22b Contact all SINC & ancient semi-natural woodland owners to promote information on Bromley Knowledge. (eg. recognition of potential bat roosts when tree work undertaken, link to Bat SAP).</p> <p>22c Target privately-owned sites in WHS and all SMIs by 2009 to provide advice, support and inspiration.</p> <p>22d Organise at least one workshop by 2009 (Link with Farmland HAP).</p> <p>22c Promote guidance on appropriate management for species and species groups with specialist requirements via Bromley Knowledge; ongoing.</p> <p>23a Promote initiatives such as Woodlots/Woodnet through Bromley Knowledge.</p> <p>23b Through work of Framework and LBP Working Group (promoting locally through Bromley Knowledge) including possibilities for timber stations in London.</p>

<p>24 Maintain and promote an accessible database of relevant woodland experience</p> <p>25 Raise awareness of grant availability for the establishment of new woodlands and woodland management.</p> <p>26 Organise open/demonstration days to promote actions undertaken on Council-owned land or privately-owned land to other woodland owners.</p>	<p>23c Encourage marketing locally to those interested in woodcrafts or for use in management (eg. Hedgelaying, fencing); ongoing.</p> <p>24a Ongoing; guide managers to appropriate information through work of LBP Working Group and Framework for London (promoting locally through Bromley Knowledge).</p> <p>25a Promote through Bromley Knowledge and workshops and on-site advice to private landowners;</p> <p>26a Through efforts of Working Group (LBP) and Forestry Authority.</p> <p>26b Promote Scadbury Park as a demonstration woodland.</p>
<p>Woodland Research & Monitoring</p>	
<p>27 Undertake NVC surveys of ancient semi-natural woodlands.</p> <p>28 Monitor important woodland species identified locally and under the UK & London BAPs.</p> <p>29 Create and monitor glades where relevant, as part of management plans.</p> <p>30 Maintain awareness of the impact of damage by 'pests', and extent of diseased trees and invasive species.</p> <p>31 Implement standard methodology, to be devised by the Forestry Commission, for assessing condition, stand, and age structure and tree survivorship.</p> <p>32 Identify buffer zones for SINC and other</p>	<p>27a Complete NVC survey of Scadbury by 2008.</p> <p>27b Through GLA survey of targeted SINC sites by 2009.</p> <p>28a Survey woodlands for dormice (See Dormouse SAP targets)</p> <p>28b Survey for woodland butterflies (See Butterfly SAP targets)</p> <p>28c Undertake Woodland Bird Index in at least two woodlands by 2009.</p> <p>28d Establish system for promoting woodland birds seen in High Elms Country Park by end of 2006; consider setting up at other sites (eg. Well Wood) by 2009.</p> <p>28e Draw up list of other species that may be important to monitor locally and implement as part of relevant management plans (eg. early purple orchids).</p> <p>29a Ongoing</p> <p>29b Continue management of glades and rides along butterfly transect route;</p> <p>29c Undertake fixed point monitoring in particular glades at High Elms to promote the woodland cycle to the public.</p> <p>30a Ongoing; assess impact as part of management plans, including monitoring of effect of increasing deer population.</p> <p>30b Provide information through Bromley Knowledge.</p> <p>31a Ongoing once methodology established (Link with Ancient Trees SAP).</p> <p>32a Analyse maps and knowledge of local land</p>

<p>woodland.</p> <p>33 Promote recording of bird species and detailed survey work of birds within woodlands.</p>	<p>uses (Phase I) to assess key areas by 2009.</p> <p>33a Target woodlands for survey work as appropriate; at least 5 by 2009 (address through Bird Action Group).</p> <p>33b Promote through RSPB group and Friends of Groups; ongoing.</p> <p>33c Identify those who contribute to the Common Bird Census Monitoring Scheme or undertake bird tagging in the area; encourage sharing of results.</p>
<p>Woodland Awareness</p>	
<p>34 Encourage community involvement and a greater understanding and enjoyment of trees, woodland and associated species and traditional skills Encourage public access to woodland in areas where this is appropriate, ensuring minimum damage.</p> <p>35 Ensure that private landowners or woodland visitors are aware of the use of local or sustainable timber products on site.</p> <p>36 Encourage the better use of woodlands for formal and informal education.</p> <p>37 Promote efforts for increasing understanding and involvement with woodlands amongst youth groups.</p>	<p>34a Ongoing via walks, talks, events and volunteer programmes.</p> <p>34b Maintain Borough Tree Warden Scheme</p> <p>34c Host Wood Working Courses and promote craft days.</p> <p>34d Contribute to 'A Walk in the Woods' Campaign.</p> <p>34e 34a Ongoing; promote accessible woodlands locally via Bromley Knowledge by 2009 including recognition of health and quality of life benefits of woodland.</p> <p>34f Promote woodlands and engagement through press releases and articles in appropriate publications; at least 3 by 2009.</p> <p>35a Inform landowners and invite them to see their timber in action</p> <p>35b Publicise on site as appropriate.</p> <p>36a Promote woodland and encourage visits by schools and youth groups (through SUN Project and Urban Habitats HAP).</p> <p>37a Implement as part of the SUN Project; continue efforts thereafter.</p>

6 Responsible bodies

Woodland owners, London Borough of Bromley, Forestry Authority, English Nature, Kent Wildlife Trust, London Wildlife Trust, GLA, Orpington Field Club, National Trust, Corporation of London, the Woodland Trust, London Biodiversity Partnership, Trees for Cities.

7 Complementary Plans

Habitat action plans have been prepared for Wet Woodland, Lowland Beech and Yew Woodland, and Lowland Wood Pasture and Parkland under the UK Biodiversity Action Plan; all are priority habitats. Broad habitat statements also prepared for Broad-leaved, Mixed and Yew Woodland, Planted Coniferous Woodland, Lowland Wood Pasture and Parkland. The London Biodiversity Action Plan includes HAP for Woodland.

Other related BBAP action plans include: stag beetles, song thrush, bats, ancient trees, butterflies, common dormouse.

Habitat Action Plan 3rd Edition BBAP 2006-9

HEDGEROWS

“I have more than once gone on purpose during a gale to watch the Bryony growing in an exposed hedge” (Charles Darwin).

A hedgerow is defined as a line or narrow belt of closely spaced woody shrubs, retained or managed to form a more or less continuous barrier. Hedges make a significant contribution to the Borough's landscape. Many of Bromley's hedgerows, particularly next to roadsides, are rich in species and help provide links with other semi-natural habitats. Assessing the wildlife value of hedgerows poses problems because of the wide variety of hedge types and the relative importance of features, which are thought to contribute to the overall wildlife value.

VISION: Hedges shape the pattern of Bromley's countryside reflecting our agricultural heritage, forming a network of corridors for wildlife; we must protect and manage them.

AIMS:

- *To protect and enhance existing hedgerows*
- *To plant new hedgerows, especially where they can provide important links*
- *To survey and monitor the ecological quality of Bromley's hedgerows*

1 Current status

1.1 Area & Distribution

It is estimated that 42% of British hedges (154,000km) are ancient and/or species-rich. The majority are concentrated in southern England and southern Wales.

It is estimated that Bromley has 320km of hedgerows in the Green Belt. Hedges occur in greatest profusion in the fields of the Downs and often enclose a network of ancient rights of way and rural sunken lanes. To the east of the Borough, particularly on the ridge between the Cray and Darent Valleys, remnant field boundary systems persist as lines of old pollarded trees. An almost uninterrupted system of roadside hedges remains. Hedgerows in urban areas have not been surveyed, as current landscape assessment methods do not help evaluate the importance of hedgerows for wildlife in urban settings.

The CMS' 1995 Hedgerow Survey of the Green Belt found a pattern in the distribution of different types of hedges:

- *Elm hedges* - In the area to the east of St. Pauls Cray, elm constitutes over 90% of the species present.

- *Mixed hedges* - Found frequently on the Downs and on the top of the ridge between the Cray and the Darent. Hedges made up of at least three of the following species: hawthorn, hazel, field maple, holly and blackthorn.
- *Hawthorn hedges* - Tend to occur where fields were reorganised in the 19th and 20th centuries.
- *Boundary hedges* - Found on old boundaries where tree species are particularly evident and often pollarded. examples are in Norsted valley and the boundary between Bromley and Crockenhill.

1.2 Trends

Since 1945 there has been a drastic loss of hedgerows throughout the UK through removal and neglect. The total length of hedge in England in 1984 was estimated at over 200,000 miles. Between 1984-90 two miles of hedge were grubbed-up for every one mile planted (Department of Environment, 1990). The UK remains the most significant country in Europe for hedgerows. Of particular importance are ancient hedgerows (those which predate the period of the Enclosure Acts 1720-1840) and species rich hedgerows.

Bromley's hedgerows are rich in shrub and tree species ; 34 species were identified in the 1995 Hedgerow Survey. The most diverse hedgerows are found in the downland areas, with an average of 9 species, compared with the Cray valley with 7 species and the Ridge between the Rivers Cray and Darent with 5 species. In the Downs it may be that as woodland was removed, strips or Shaws were left to form hedges; or saplings from the locality may have been uprooted and planted as hedgerows. Woodland edge hedgerows are a regional speciality. The Council's Parks and Conservation Section carried out a survey of the species composition of 125km of hedges along rural road verges in 1999.

The 1995 survey revealed that the vast majority (85%) is connected either to another hedge or to woodland. The high degree of connectivity in Bromley is favourable to wildlife movement. Hedges are thought to act as wildlife corridors for many species, including reptiles, amphibians, small mammals and bats. There are relatively few large gaps in hedges. Only 5% of hedges have gaps which form more than 40% of the hedge length. Over half the hedges have no, or only occasional gaps. The optimum structure is seen as a tall, dense hedge with a broad base and with standard trees, which are particularly good for nesting birds. Bats and dormice prefer overgrown hedges, cut on a 2-3 year cycle. Ancient hedgerows tend to be those that support the greatest diversity of plants and animals. Banks, verges and ditches associated with the hedgerow can further contribute to its wildlife value. Some of these hedgerows may be present within existing urban areas.

Since 1945, traditional management has declined, primarily due to the change from mixed farming to arable, which does not require stock proofing. Decline in livestock has been particularly pronounced since the 1970s. This has led to gappy hedgerows and lack of continuity. There have been losses of hedgerows due to Dutch elm disease. The demand for land, the intensification of agriculture, high labour costs and loss of traditional skills, larger farm equipment needing larger fields, heavy snow fall, urbanisation and the expansion of the road network since the late 1800s have all contributed to hedgerow loss. Hedgerow loss has been most pronounced on the ridge between the rivers Cray and Darent. Fewer hedgerows were removed in the Downland area at this time.

The 1995 survey indicated that 40% of Bromley's hedgerows are unmanaged. In the short term this can often benefit wildlife, but where lack of management continues, gaps develop and hedges change into lines of trees and also become useless for keeping in animal stock, such that they are

eventually removed. 56% of hedgerows are trimmed, clipped or flailed. This can eventually open up gaps in the lower part of the hedge. 2% of hedgerows are layed and 2% coppiced and although initially an apparently drastic approach, recolonisation is quick and longevity of a thick, dense and potentially diverse hedge is ensured.

Appropriate management has been encouraged by the fact that provision of grants for the removal of hedgerows has been replaced by incentives for their management and creation, (e.g. DEFRA Schemes). The 2004/5 linking of agricultural payments with appropriate timing of hedgerow trimming, the retention of field margins and the prevention of pesticides and fertilisers close to the base of hedgerows on arable land will come to benefit hedgerow species. In other areas, trimming of hedgerows at inappropriate times of year remains a problem on some sites. Too frequent and badly timed cutting of hedges, leads to poor habitat conditions, the development of gaps and probably species change. It also affects other species, such as nesting birds, insects and climbing plants.

Traditional management is costly and is aimed at hedgerows of high value. There has been an increase in interest in the traditional skill of hedgelaying, with examples being set by the Council on both Council-owned and privately owned land. Demand has also been reflected in the slight increase in contractor hedgelayers .

Lack of protection to hedgerows from the browsing effects of stock, including horses, continues to have a detrimental impact on hedgerows and their ground flora. Some landowners have begun to construct fence-lines away from hedgerows. It is particularly important to protect new hedges from grazing animals.

Increased use of rural lanes by vehicles has led to the undercutting and erosion of roadside hedgebanks. Banks become unstable, flora associated with the hedgerow bottoms is being lost and exposure of root systems can lead to loss of woody species. Bromley Council has taken steps to protect hedgerow bottoms, by the installation of sympathetic wooden revetment.

A greater appreciation of hedgerows has helped to save many hedgerows in recent years. The public has become particularly interested in hedgerows of historical interest (eg. 'Beating the Bounds').

2 Current Factors Affecting the Habitat

- a) Lack of management.
- b) Too frequent and badly timed cutting of hedges.
- c) Overstocking leading to over-browsing of hedgerows or hedgerow ground flora.
- d) Landowners are reluctant to gap up existing hedgerows or create new hedgerows due to cost of plants and protective shelters/fencing.
- e) Increased use of rural lanes by vehicles has led to the undercutting and erosion of roadside hedgebanks.
- f) The use of pesticides (herbicides & insecticides) and fertilisers at the base of hedgerows.
- g) The cost of management favouring a mechanical approach.
- h) An increase in interest in the traditional skill of hedge laying.
- i) Road widening and dumping of plantings on to hedgerow banks.
- j) Loss of hedgerow trees through senescence and felling, without replacements being made.

- k) Loss of hedgerows through development and landscaping works, including around gardens.

3 Current Action

3.1 Protection

The UDP includes policies that aim to encourage positive management of hedgerows, replacement of hedgerows and the planting of new ones. The Hedgerow Regulations 1997 requires owners to notify the local planning authority before removing any stretch of hedgerow which is more than 30 years old and over 20 metres in length, or under 20 metres in length and meeting another hedgerow at each end. Owners who fail to do this will be guilty of an offence. Important hedgerows are assessed according to criteria listed in the Regulations.

3.2 Management

Landowners are responsible for the management of hedgerows on their land. The Council undertakes the cutting back of 70km of roadside hedgerow in an established programme using contractors. Since 1987, the CMS has provided advice or assistance on the laying or planting up of 7500m and 10km of hedgerow respectively. Since 1993, Parks & Conservation (LBB) has planted over 1000m and laid 850m of hedges in school grounds and Council-owned sites, including Scadbury Park, Norman Park and Darrick Wood.

Walks, talks and events on hedgerows are regularly held.

4 Key species (not exclusive)

Flagship Species:

Flora: Butchers broom, ancient standard trees, spindle, mature elm, bluebell, wood anemone, hazel, field maple, dog's mercury, primrose, and greater stitchwort, wood sorrel, goldilocks.

Fauna: dormouse, dunnock, yellowhammer, linnets, bats, small mammals, song thrush, linnets, yellowhammer, whitethroat, lesser whitethroat, grey partridge, robin, bullfinch.

Negative indicators:

Aggressive arable weed species (cleavers, knotweed, docks, and nettle); gaps in hedgerows; dead shrubs and trees; tarmac; litter.

Retrievables:

Whole hedges, white letter hairstreak.

5 Proposed Specific Action

Actions	Targets
Hedgerows Policy & Strategy	
<ol style="list-style-type: none"> 1 Implement Hedgerow Regulations 2 Continue to implement guidance highlighted in 'Hedgerows in Bromley' document 3 Devise a detailed strategy which highlights targeted action for hedgerows and road verges. 4 Support and help implement the action on hedgerows as part of the UK Plan. 	<p>1a Ongoing. 2a Ongoing.</p> <p>3a Involving range of stakeholders, produce strategy by 2007, ensuring this complement other relevant Council transport strategies and Species Action Plans (Link to Bat and Dormouse SAPs).</p> <p>4a Ongoing.</p>
Hedgerows Management & Creation	
<ol style="list-style-type: none"> 5 Continue with existing Countryside Stewardship Agreements and apply for new Environmental Stewardship agreements on Council-owned land, where appropriate. 6 Continue with existing Countryside Stewardship Agreements and apply for new Environmental Stewardship agreements incorporating hedgerows, on privately-owned land. 7 Continue good management of well-maintained quality hedgerows. 8 Manage rural, roadside hedges. 9 Maintain and enhance degraded, non-roadside hedgerows in the wider countryside, according to the strategy. 10 Instigate new planting to create new hedgerows, particularly between isolated woodlands and hedge fragments and maintain these sympathetically. 	<p>5a Ongoing.</p> <p>6a Ongoing; 4 agreements by 2009.</p> <p>7a Ongoing; promote good examples through publicity.</p> <p>8a Ongoing; commence implementation of strategy by 2009, focussing on area within proposed World Heritage Site as a priority. (Implement a programme of laying, gapping-up and trimming (rather than flailing), anti-erosion measures, control of 'weed species in established hedges that have a detrimental affect).</p> <p>9a Ongoing; commence implementation of strategy by 2009, focussing on area within proposed World Heritage Site as a priority.</p> <p>9b Restoration 1km of hedgerow network in the east of the Borough by 2009.</p> <p>10a Ongoing; implement strategy by 2009 and thereafter.</p> <p>10b. Focus on new hedgerows within the proposed World Heritage Site by 2009.</p>

Hedgerows Advisory	
<p>11 Promote good management and planting by providing advice to farmers and private landowners (including pesticides, Regulations, grants).</p>	<p>11a Provision of adhoc and on- site advice 11b Provide and maintain guidance via Bromley Knowledge website (eg. suitable native planting, control of 'weed' species in new hedges where this is having a negative effect, importance of hedges as commuting routes for bats (link Bat SAP) and dormice (link Dormouse SAP)); ongoing. 11c Articles in Council and other publications; ongoing, but at least two by 2009. 11d Organise at least one workshop by 2009 (in association with Farmland HAP).</p>
Hedgerows Research & Monitoring	
<p>12 Investigate and trial alternative cutting regimes.</p> <p>13 Establish full extent of erosion of hedgebanks and verges by traffic and monitor.</p> <p>14 Identify key road verges/hedgebank of botanical interest.</p> <p>15 Computerise data relating to the value and condition of hedgerows on GIS, to help implement the Regulations and co-ordinate action</p> <p>16 Revisit at least 50% of hedgerows surveyed in 1995/99 surveys to monitor their ecological quality and condition.</p> <p>17 Monitor the use of hedgerows by selected species in targeted areas.</p>	<p>12a As part of strategy, review rural road verge and hedge cutting contract, with a focus on timing and frequency of cuts by 2007.</p> <p>13a Involve stakeholders in assessing situation during 2006 (include photographic surveys); assess frequency of monitoring of targeted sites and feed into strategy.</p> <p>14a Combine survey with erosion assessment during 2006 and feed into strategy.</p> <p>15a Complete by 2009, combining Phase I/aerial photograph information, available survey data and data relating to all Council-managed rural hedges, giving initial priority to hedges within the proposed World Heritage Site; update regularly.</p> <p>16a Undertake survey by 2009.</p> <p>17a Continue monitoring in key areas identified under relevant SAPs (eg. monitor dormouse populations and use of hedgerows in the Cudham Valley; birds on farmland sites).</p> <p>17b Monitor bird and bat species at Down House, incorporating hedgerows, and at key farmland sites.</p>
Hedgerows Awareness	
<p>18 Hold hedgerow-specific/non-specific walks, talks and events, to promote the importance of hedgerows and their management.</p> <p>19 Promote the historic, landscape and wildlife value of hedgerows and good</p>	<p>18a At least two events per year; include hedgerows in all talks to schools.</p> <p>19a Via Bromley Knowledge website (eg. Beating the Bounds).</p>

<p>practice (creation and management) through publicity.</p> <p>20 Encourage the general public to plant native species hedgerows</p> <p>21 Promote the work Charles Darwin undertook on hedgerows within the proposed World Heritage Site.</p>	<p>19b Two press releases by 2009, inc. reference to good management and creation.</p> <p>20a Promote as part of the Greening Bromley's Gardens Campaign; target one neighbourhood running close-by farmland by 2009 (Link to Urban Habitats HAP).</p> <p>20b Involve the public and volunteer groups in planting hedgerows; ongoing.</p> <p>21a Raise awareness of the observations made as part of the WHS bid and through specific projects and events.</p>
--	--

6 Responsible Bodies

London Borough of Bromley, Kent Wildlife Trust, farmers and landowners, Department of Food and Rural Affairs, London Wildlife Trust, National Trust, Orpington Field Club, garden associations, garden centres.

7 Complementary Plans

The UK Plan has an action plan for Ancient and/or Species Rich Hedgerows and Cereal Field Margins; broad habitat statements exist for Boundary Features and Arable. The London BAP does not currently include a HAP for hedgerows, however a Habitat Statement is included. Other related BBAP action plans include: stag beetle, song thrush, bats, hedgehog, ancient trees, butterflies, common dormouse.

GRASSLANDS

Chalk, Neutral and Acidic

“It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing in the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us.” (Charles Darwin)

The common link between these grasslands is that they are ‘unimproved’, so supporting a rich variety of less common grasses and broad-leaved herbs. All survive due to sensitive cutting or grazing, which prevents trees and shrubs from colonising. They differ in that they occur on different soils with varying pH and mineral balances, but all soils are nutrient poor.

Chalk grasslands develop on shallow, lime-rich soils, derived in Bromley from chalk bedrock. They contain an exceptional diversity of wild flowers and other plants, many of which are restricted to lime-rich soils. Consequently the invertebrate fauna is also very rich. Downe Bank, a Kent Wildlife Trust nature reserve, is internationally known for its association with Charles Darwin.

Species-rich neutral grasslands, unaffected by agricultural improvement, are rare and threatened in the UK. These grasslands are mainly managed as hay meadows or pasture and are colourful because they contain a high proportion of broad-leaved herbs relative to grasses. In Bromley, they tend to be found on soils over London Clay in pockets of small fields with hedgerows.

Acid grassland occurs on acidic, nutrient poor, generally free draining soil. They are characterised by fine-leaved grasses such as common bent and fescues, with typical herbs such as sheep’s sorrel, tomentil and heath bedstraw. In Bromley they are generally found on the gravels and sands of the Blackheath Pebble Beds and Woolwich Beds. In the UK lowlands, acid grasslands are now rare and those of Bromley are limited in extent and much fragmented. Acid grassland tends to be restricted to open areas of the remaining commons, sometimes associated with lowland heath and mire communities.

VISION:

To sympathetically manage all chalk grasslands in Bromley, over one third of London’s total, and to care for species important to Bromley, including orchids, butterflies and lizards.

To main species-rich neutral grasslands, a small reminder of a once widespread habitat before improvement for amenity or agriculture and supporting the evocatively names cuckoo flower, adder’s tongue fern and ragged robin.

Bromley’s cherished commons support fragments of acid grassland providing a flavour of one of the most extensive semi-natural habitats in Britain and our aim is to care for those species important to Bromley, including the adder.

AIMS

- *To protect the current area of unimproved and semi-improved grassland.*
- *To enhance the quality of these grassland areas by appropriate management.*
- *To increase the extent of species-rich grassland in the Borough, especially where they connect existing areas.*
- *To monitor, survey and appraise grasslands quality.*

1 Current status

1.1 Area & Distribution

Chalk:

Bromley supports around 92 ha of chalk grassland, nearly a third of Greater London's resource (LBP 2000). Although Bromley's chalk grassland is important in the London context, it is less so when compared to Kent's which contains around 5% of the UK's resource.

The majority of existing chalk grassland in Bromley is restricted to the dry valley sides of the North Downs, south of a line drawn east/west through Farnborough. Outliers occur in the Green Belt to the east of the Borough, as far north as Goddington Park.

Bromley's chalk grasslands support a number of nationally rare species. Many of these are continental in their distribution and only occur in Britain in the extreme south-east (notably on the North Downs) where climatic conditions closely approach those of mainland Europe. The Greater London area also harbours some of the eastern-most populations of rare species with a more Atlantic tendency. Bromley has a colony of the rare Kentish milkwort.

Neutral:

The UK has an estimated 15,000ha of species-rich, neutral grassland. Although neutral grasslands are relatively common in Bromley, unimproved species-rich neutral grasslands are particularly rare, especially those of damper soils. These grassland types are also considered to be of county importance in Kent. The accurate area of neutral grassland in Bromley remains to be determined.

Good quality neutral grassland can be found in very few areas, notable amongst these are Jubilee Country Park, High Elms, Holwood, and Belmont Meadow in Chislehurst. Some churchyards contain fragments of neutral grassland. Some of the fields at Ravensbourne Open Space are good examples of wet neutral grassland.

Acid:

Little information is available about the extent of acid grassland in lowland Britain, but it is likely to be rare at an estimated 30,000 ha. Acid grassland is widespread in London, occurring in 26 of the London Boroughs and estimated at 1300 ha. However, it is likely to be under-recognised due to the difficulty in locating examples.

Acid grassland in Bromley tends to be fragmented and is unlikely to be of national importance. Regionally however, Bromley contains a significant proportion of London's acid grassland, which is an

important reservoir of rare or scarce species. The accurate area of acid grassland in Bromley remains to be determined.

Acid grassland in Bromley tends to be strongly associated with the Blackheath Pebble Beds in the central and northern parts of the Borough. Hayes, Keston, Farnborough, Chislehurst and St. Paul's Cray Commons all have areas of acid grassland, as do open spaces such as Sundridge Golf Course. Other examples may be found at Hoblingwell Recreation Ground, St Nicholas Churchyard in Chislehurst and verges in Keston Park Estate.

1.2 Trends

Between 1930 and 1984 semi-natural lowland grassland decreased by an estimated 97% in England and Wales.

There is no comprehensive data concerning rates of chalk grassland loss nationally or locally. However, the ploughing of land for arable use, 'improvement' of swards through the sowing of high-yielding pasture grasses, afforestation and the increase in the use of pesticides and fertilisers over the last 100 years have all taken their toll on the North Downs. Since the demise of sheep pasturing and the decline of the rabbit after myxomatosis, much grassland succumbed to invasion of scrub and woodland via the process of natural succession. Rabbit numbers have once again increased. The most common management approach is to produce a mosaic of different habitats so as to support as wide a range of species as possible. Coordinated grazing of important chalk downland sites in the valleys eitherside of Cudham plateau over the last 10 years and greatly improved the connectivity and appropriate management of grasslands. Some sites are management with specific species in mind; Blackbush Shaw is cut very short, for example, to encourage the Kentish Milkwort and effort will be made to promote horseshoe vetch at West Kent Golf Course for the small blue butterfly.

Lowland acid grassland is declining in extent nationally. It is likely that the habitat has declined greatly with the loss of open heathy habitat on the various commons in Bromley, as traditional management practices were abandoned. The LBP suggest that this grassland type suffers from lack of clear identity and low image and therefore is vulnerable to damage. The majority of the resource is also subject to heavy amenity use.

The extent and quality of unimproved neutral grasslands in Bromley have no doubt shown a similar decline. In both cases, loss of habitat through development; heavy grazing by horses; re-seeding, pesticides and fertiliser use; and scrub and woodland encroachment are likely to have had significant impact on Bromley's grasslands.

There has been a limited amount of progress in generating interest in grassland amongst the public nationally; highest profile has been given to chalk grasslands. The majority of the public, including landowners, are likely to be unaware of the key differences between grassland types and their significance. As such, sites supporting these grasslands are likely to be managed with little understanding of the requirements of the plant species they support. Management, including grazing, is extremely influential in determining the range of species which predominate within a sward. The value of woody scrub and uncut vegetation for species, including for butterflies and reptiles, is not always appreciated.

Creating chalk grassland is currently popular, especially due to the DEFRA Countryside Stewardship Scheme.

Though not as diverse as unimproved grassland, semi-improved grasslands can provide important habitat for a number of invertebrates and can provide important corridors for species moving between sites of greater interest.

Grazing in urban-fringe areas has declined for a number of reasons, amongst these are lack of profitability and slaughter houses, vandalism, theft and animal health issues. The small and often isolated areas of semi-natural grassland can deter contract graziers.

2 Current Factors Affecting Habitat

- (a) Loss of habitat through lack of traditional management, especially grazing, causing encroachment by rank grasses, scrub and trees.
- (b) Over grazing by horses or change from hay cutting to spring and summer grazing.
- (c) Fragmentation and isolation of remaining habitat.

- (d) Damage to the habitat by ploughing and from inappropriate pesticide use, application of fertilisers or lime (on non-chalk grasslands), reseeding, over-cutting, irrigation, tree planting.
- (e) Damage and erosion caused by increasing recreational pressure (eg. thin turf of chalk grassland).
- (f) Pollution and climate change.
- (g) Direct loss of habitat through development.
- (h) Creation of new grasslands on arable land
- (i) Genetic variation of 'imported' seeds.

3 Current Action

3.1 Protection

There are two SSSIs in the Borough notified for their chalk grassland communities; Downe Bank and High Elms SSSI (also a LNR) and Saltbox Hill SSSI. A number of other sites are SINCs and have some protection under the Unitary Development Plan. Others currently have no protection.

Significant areas of neutral grassland fall under Council ownership; Ravensbourne Open Space form part of the Keston and Hayes Common SSSI. Scadbury Country Park and Jubilee Country Park have been declared Local Nature Reserves and are managed for nature conservation; they are also designated as SINCs.

Keston Common and a small area of Hayes Common have been designated as SSSIs for their acidic grasslands. A significant area of Hayes Common, Sundridge Golf Course, and Chislehurst and St. Paul's Cray Commons are designated as SINCs.

3.2 Management

Chalk:

The Council, sympathetic landowners and groups, such as Kent Wildlife Trust and London Wildlife Trust, now manages the majority of important chalk grassland sites for their nature conservation value (eg. Salt Box Hill). The Kent Wildlife Trust manages Downe Bank, of great inspiration to Charles Darwin; the Council manages most of the remainder of the Site of Special Scientific Interest. Relict chalk grassland communities have been found at Goddington Park and Glentrammon Recreation Ground.

Management includes scrub clearance, grass cutting, baling and grazing. Beyond these, only a small handful of sites have the potential to support good quality chalk grassland; scrub removal and grazing with nature conservation in mind would help in these cases. DEFRA grant schemes are in operation on several sites and continue to be promoted by the CMS on privately owned land. Equipment purchased through 'Chalking Up London's Downs' has improved the efficiency of grass cutting and seed collection.

The Countryside Management Service gives management advice and help to private landowners. Examples include Hewitts Chalk Bank, West Kent Golf Course, Bottom Barn Farm, Blackbush Shaw, Chelsfield Hill and Salt Box Hill. More effort has been placed into returning grazing to a number of sites, including Bottom Barn Farm, Lordfield Shaw, Hang Grove and Burnt Gorse (High Elms). This management approach will be pursued on other sites in the Borough.

Significant areas of scrub have been removed from a number of chalk downland sites over many years. Arable reversion areas have included Bottom Barn Farm, Charmwood Farm, Hang Grove and fields off Cockmannings Lane and Avalon Road.

With the help of local fundraising, the Woodland Trust purchased Blackbush Shaw in 1997, and included a small but important area of chalk grassland. In 1999, London Wildlife Trust purchased 7ha of chalk grassland and woodland at Salt Box Hill, with the help of the public and sponsors. Both campaigns were supported and promoted by the CMS.

There is regular monitoring of plants (eg. orchids) and butterflies on some key sites, usually as species lists. Student projects have been undertaken (e.g. a study on the effect of the bulldozing of scrub on a chalk grassland sward). During 2005, glow-worm surveys were also undertaken on selected sites.

The Heritage Lottery Funded 'Chalking Up London's Downs' project was initiated in 2001-2003. The partnership includes the Corporation of London, London Borough's of Bromley (lead) Sutton and Croydon, English Nature and London Wildlife Trust. This promoted public involvement in chalk grassland and best management practice. Vegetation and invertebrate surveys were undertaken, as well as a survey of public perception. This helped supplement information already gathered through the 'London Chalk Grassland Survey' (1988), volunteers chalk grassland survey (2000) when 24 sites on private and publicly owned land were surveyed and GLA survey of SINC's (2001). Through the HLF project, displays and leaflets promoting the heritage and health benefits of chalk downland were published, alongside children's activity sheets. During 2005, the 'Exploring in Darwin's

Footsteps' HLF Project has highlighted the value of chalk downland to the public and sought expert help in surveying species.

At least six guided walks are held per year on chalk grasslands. Visits by specific groups also continue to be arranged (eg. . BBC Wildlife Readers, Universitys).

Neutral:

Semi-natural, unimproved neutral grasslands on land managed by the Council are managed for their wildlife. Normally one cut is taken per year between late July and early September, the hay baled and taken off site. At least one guided walk per year is held to promote neutral grasslands. Friends of Jubilee Country Park help to manage and survey neutral grasslands and other habitats at the Local Nature Reserve.

Acid:

The majority of acid grassland on Council-owned land is cut once a year and the clippings removed to keep nutrient levels down, and to prevent further encroachment by scrub. Acid grassland areas continue to be extended through appropriate scrub clearance. The Chislehurst & St Paul's Cray Commons Conservators have taken similar steps.

LBP effort is focussing on the promotion of acid grassland as an important invertebrate habitat and surveys will be undertaken during the 3rd Edition BBAP to evaluate the grasslands in London. A resource of educational material is also to be developed. During 2005, a pamphlet on 'Acid Grassland Conservation in London' was developed by LBP to promote acid grassland species and good management practice.

4 Key species (not exclusive)

4.1 Chalk grassland

Flagship Species:

Flora: Fragrant orchid, man orchid, autumn lady's-tresses, Kentish milkwort, greater yellow-rattle, kidney vetch, quaking grass, pyramidal orchid, yellow-wort, carline thistle, felwort (autumn gentian), sheep's fescue, common rock-rose, chalk milkwort, yellow-rattle, small scabious, wild thyme, basil, hairy violet, bee orchid, fly orchid, horseshoe vetch, greater knapweed, cowslip and lichens.

Fauna: Chalkhill blue butterfly, small blue butterfly, dark green fritillary butterfly, glow-worm, burnet moth, ant hills, adder, slow-worm, common lizard, skylark, song thrush, corn bunting, green woodpecker, linnets, grey partridge, kestrel, barn owl, Roman snail, house martin, meadow pipit, harvest mouse.

Negative Indicators:

Upright brome, cocksfoot, false oat grass and woody scrub.

Retrievables:

Small blue, horseshoe vetch, marbled white.

4.2 Neutral Grassland

Flagship Species & Retrievals:

Flora: Adder's-tongue fern, corky-fruited dropwort, pepper saxifrage, common spotted orchid, sneezewort, cuckooflower, ragged robin, bird's-foot trefoil, yellow-rattle, common sorrel, and lesser stitchwort.

Fauna: Yellow meadow ant, skylark, meadow pipit, skylark, song thrush, corn bunting, green woodpecker, linnets, grey partridge, kestrel, barn owl, swallows, house martin, harvest mouse.

Negative Indicators: Coarse grasses and scrub

4.3 Acid Grassland

Flagship species:

Flora: Harebell, bird's-foot, heath bedstraw, wavy hair-grass, sheep's sorrel.

Fauna: common lizard, adder, solitary/burrowing bees and wasps, anthills, green hairstreak, small copper, skylark, song thrush, corn bunting, green woodpecker, linnets, grey partridge, kestrel, barn owl, swallows, house martin, meadow pipit, harvest mouse.

Negative indicators:

Bracken, birch and other trees, coarse grasses (high percentage of perennial rye grass).

Retrievals: All above notable and quality indicator species.

5 Proposed Specific Action

Actions	Targets
Grasslands Policy & Strategy	
<p>1 Support and help implement the action of the London Biodiversity Partnership, through Chalk Grassland Working Group and London Acid Grassland Working.</p>	<p>1a Attend relevant meetings 1b Contribute to implementation of 'Old Surrey Downs' HLF bid, if successful (relevant to Salt Box Hill). 1c Continue to promote action and achievements made through 'Chalking Up London's Downs' HLF Project (eg. utilise equipment and training resources for the benefit of LBP partners and community groups). 1d Coordinate bid and implement (if successful) 'Chalking Up London's Downs II' HLF application or devise local bids, to contribute to local and regional targets (eg. promoting education use of sites, employing a walking coordinator). 1e Identify potential chalk grassland sites in London for reversion, restoration and creation by end of 2006 as part of working group.</p>
<p>2 Produce a Grassland Strategy, which</p>	<p>2a Produce Grassland Strategy by 2009.</p>

<p>consolidates existing information and targets practical action for all three grassland types.</p> <p>3 Protect important grassland and seek establishment or good management of semi-natural grassland through the planning process.</p> <p>4 Hold meetings of Bromley 'Heathland & Acid Grassland Action Group'.</p>	<p>3a Ongoing; designated and undesignated sites.</p> <p>4a. Ongoing; (Link to Lowland Heathland & Mire HAP).</p>
<p>Grasslands Management & Creation</p>	
<p>5 Ensure all important unimproved grassland sites on Council-owned parks, country parks and farm landholdings are covered by management plans, and sites grazed and hay baled wherever possible.</p> <p>6 Manage grassland on private landholdings.</p> <p>7 Connect key grassland sites to establish corridors by creating or restoring areas of species-rich grassland.</p> <p>8 Where appropriate, identify key species with specialist management requirements, locally and regionally.</p>	<p>5a Management plans to be revised every 5 years; ensure all sites within the proposed World Heritage Site are included and updated during 2006.</p> <p>5b Implementation of existing Countryside Stewardship Schemes and future Environmental Stewardship Schemes.</p> <p>5c Maintain SSSI sites in accordance with English Nature agreements.</p> <p>5d Active enhancement of areas of relatively species-rich semi-improved neutral grassland; at least one by 2007.</p> <p>5e Actively graze Cudham Valley chalk grassland sites annually.</p> <p>6a Ongoing.</p> <p>6b Agree management objectives and/or plans on all key SINCs by 2009.</p> <p>7a Manage arable-reversion/scrub cleared links in the Cudham valley, especially between High Elms Country Park & Downe Bank</p> <p>7b Seek further opportunity under the strategy; create 2ha of semi-natural grassland by 2009.</p> <p>8a Continue to implement specific management for orchids in the 'Downe Bank & High Elms' SSSI & for the Kentish milkwort at Blackbush Shaw;</p> <p>8b Identify further species as part of Strategy and implement as appropriate.</p>
<p>Grasslands Advisory</p>	
<p>9 Inform private landowners of the availability of grants, management techniques and value of grasslands, including for specific species.</p>	<p>9a Ongoing adhoc and on-site advice.</p> <p>9b Provide information on Bromley Knowledge by 2007; maintain information regularly.</p> <p>9c Hold workshops/open days on each of the 3 grassland types by 2009, targeting owners and managers of SINCs (Link to efforts under</p>

	<p>Farmland HAP).</p> <p>9d Continue to promote 2005 Best Practice Guidelines produced by Acid Grassland Working Groups.</p> <p>9e Promote best practice guidelines produced by the LBP Chalk Grassland Working Group by 2007.</p>
--	--

Grasslands Research & Monitoring

<p>10 Undertake Phase II/NVC surveys on all non-chalk grassland SINCS</p> <p>11 Establish monitoring on selected SSSI and SINCS grasslands, including particular species, using appropriate methods.</p> <p>12 Survey sites adjacent to key chalk grassland areas, which may still support chalkland species.</p> <p>13 Collate existing information on invertebrates and further survey for invertebrates on grasslands.</p> <p>14 Surveys for reptiles on semi-natural grasslands.</p> <p>15 Maintain up to date record of all London chalk grassland through reassessment of coverage.</p> <p>16 Maintain computerised database for flora (eg. NVC) and fauna (eg. common lizard, bird species)</p>	<p>10a Undertake detailed surveys of acid grassland sites on at least 50% of sites by 2009.</p> <p>10b Survey and appraise the quality of all key neutral grassland sites by 2009.</p> <p>11a Identify sites for monitoring as part of strategy and implement at least two monitoring programmes by 2009; priority sites falling with proposed World Heritage Site.</p> <p>12a Involve chalk grassland volunteer surveyors in surveying sites and assess quality by 2007.</p> <p>13a Collate existing information on invertebrates for all sites by 2007; maintain on database on an ongoing basis.</p> <p>13b Extend survey work on invertebrates on semi-natural grassland sites within the proposed World Heritage Site.</p> <p>13c Seek funding for targeted invertebrate surveys (eg. small copper) of Greater London acid grassland as part of the Acid Grassland Working Group (LBP).</p> <p>14a Building on existing surveys, identify further sites for surveying, provide training and implement by 2009.</p> <p>15a By 2007 as part of London Chalk Grassland Working Group.</p> <p>16a Collate all available data for key sites by 2009, adding to that already computerised (eg. audit of chalk grassland).</p> <p>16b. Update data regularly.</p> <p>16c 'Record' anecdotal changes to grasslands and it's species.</p>
--	---

Grasslands Awareness

<p>17 Give walks, talks and events which highlight the value of all grasslands, especially chalk grasslands.</p> <p>18 Continue school visits to High Elms and Scadbury Park, highlighting the value of grasslands.</p> <p>19 Highlight Charles Darwin's work on local chalk grasslands.</p> <p>20 Publicise the value of chalk grassland, public perception of chalk grassland etc.</p> <p>21 Promote leaflets of London's acid grassland resource produced by Acid Grassland Working Group (LBP).</p> <p>22 Promote the value of neutral grassland on Council-owned sites.</p> <p>23 Integrate acid grassland with heathland training programme of management, monitoring and interpretation.</p> <p>24 Organise local visits by ward councillors to increase their appreciation of grasslands and their potential.</p> <p>25 Promote the value of restored chalk grassland gardens.</p>	<p>17a At least 4 per year, promoting flora and fauna dependant on the sites (eg. reptiles).</p> <p>17b Market jointly with LBP, as appropriate.</p> <p>17c Produce cultural heritage slide pack and powerpoint presentation for use by LBP partners.</p> <p>18a Ongoing, but ensuring reference to BBAP.</p> <p>19a Promote the Darwin Trail leaflet and website for proposed World Heritage Site.</p> <p>20a Promote 'Walk the Chalk' and 'Enjoying London's Chalk Downland' leaflets to the public.</p> <p>20b Annually display the 'Chalking Up London's Downs' display.</p> <p>20c Promote the 4 children's fliers arising from 'Chalking Up London's Downs' to chalk downland via schools, youth groups, outlets and Bromley Knowledge.</p> <p>20d Produce articles and press releases at least twice by 2009.</p> <p>21a By 2009.</p> <p>22a Promote leaflet and maintain interpretation board for Jubilee Country Park; ongoing.</p> <p>23a Organise through Acid Grassland Working Group (LBP) as appropriate.</p> <p>24a At least 2 visits by 2009, especially for acid grassland (to support specific action by LBP Acid Grassland Working Group).</p> <p>25a As part of the LBP by 2007.</p> <p>25b Promote as part of development guidelines and through the Greening Bromley's Gardens (including SUN Project).</p>
--	---

6 Responsible bodies

London Borough of Bromley, Kent Wildlife Trust, Orpington Field Club, English Nature, London Wildlife Trust, Chislehurst and St. Paul's Cray Common Conservators, relevant landowners, DEFRA, London Biodiversity Partnership.

7 Complementary Plans

An UK action plan for Lowland Calcareous Grassland has been prepared; a broad habitat statement for Calcareous Grassland exists. A broad habitat statement has been prepared for unimproved neutral grassland under the UK Plan. An action plan has been produced for Lowland Meadows. An action plan has been prepared for Lowland Dry Acid Grassland under the UK Plan; a broad habitat statement for Acid Grassland exists.

HAPs for 'Chalk Grassland' & 'Acid Grassland'. In addition, an audit for 'Grassland, Meadows and Pasture' has been included in the LBP, Volume I, which incorporates neutral grasslands.

Other related BBAP action plans include: song thrush, skylark, butterflies, glow-worm.

LOWLAND HEATHLAND AND MIRE

“On Hayes Common where it was burnt the heath is a good deal mixed with gorse and there is much moss but not lichen...” (Charles Darwin)

Lowland heathland is usually found on acidic, sandy free-draining soils that are nutrient poor. It is characterised by the presence of plants such as heather, purple bell heather, dwarf gorse and cross-leaved heath, and is generally found below 300m in altitude. Areas of good quality heathland consists of an ericaceous layer of varying heights and structures, some areas of scattered trees and scrub, areas of bare ground, gorse, wet heath, bogs and open water. Bromley has one of only four mires in the Greater London boundary and it is the most species rich. The habitat is also important habitat for invertebrate and reptile species. Charles Darwin visited Keston Common especially to look at sundew plants.

VISION: Bromley's isolated heathland portrays one of the rarest and most threatened semi-natural habitats in Britain and our aim is to care for those surviving species, such as heather, bog asphodel, cow wheat and bilberry.

AIMS:

- *To protect, manage and enhance all remaining heathland and mire.*
- *To increase the area of heathland via habitat creation or restoration.*
- *Increase public awareness of the habitat and involvement in its management.*

1 Current Status

1.1 Area & Distribution

Over half of the area of lowland heath is found in southern England; this represents 20% of the international total for this habitat. Only a small amount of heathland is found in Kent. Greater London has a total of only 80ha. In Bromley, the majority of this habitat can be found on Keston and Hayes Commons and St Pauls Cray Common, with small patches present on Chislehurst Common, Padmall Wood, West Wickham Common, Farnborough Common and Petts Wood. All these sites occur on Blackheath Pebble Beds. There is currently only an estimated 3ha of heathland remaining, although isolated patches are under woodland or where disturbance of the soil and gaps in the tree canopy coincide (e.g. bridleway margins). A valley mire of less than 0.5 ha survives on Keston Common. The restoration of small areas historically supporting heathland species and further linkage between existing relics of heathland over the period of the 2nd Edition BBAP in particular, has led to changes in heathland areas on individual sites.

Heathland in Bromley does not support the range of rare species found in larger tracts. However, many of the species present are regionally rare or notable, including those of the valley mire. Bromley has one of only four mires in the Greater London boundary, and is the most species rich, despite its size and long-term isolation. The varied topography and terrain of many heathland sites makes them especially attractive to a range of specialised invertebrates; local information is limited to Odonata.

1.2 Trends

In England, only one sixth of the heathland present in 1800 now remains. At the turn of the century, maps show much of Keston and Hayes Common as open heathland; scattered trees were indicated on the margins of the commons in the 1930s. Heathland here has declined by over 90% in the last 100 years. A similar history can be traced for Chislehurst and St Paul's Cray Commons.

The small fragments of heathland which exist in London, make them more vulnerable to unsympathetic works. It is important to maintain the distribution of lowland heathland across its range in order to minimise the risk of species extinction. A number of these sites are particularly vulnerable to rubbish dumping and fires.

The LBP states that the gauges of habitat quality include the age-range of heather and kindred plants, the extent of important associated habitat components such as scrub and bare ground and their comparative species diversity.

In the last 10 to 15 years, efforts have been made on the commons to halt the spread of woodland on to the remaining heathland fragments.

Greater promotion of the value and complex nature of this habitat has been undertaken nationally over the last few decades, for example through English Nature's Lowland Heathland Campaign. Significant progress has been made on a London-wide basis in sharing information, seeking funding and promoting heathlands, through the LBP's Heathland Working Group. Work to connect heathland fragments as part of the restoration process has been in progress at Hayes Common and St. Paul's Cray Common.

2 Current Factors Affecting Habitat

- (a) Loss of habitat through lack of traditional management, especially grazing and cutting, causing encroachment by trees and scrub.
- (b) Intensive or inappropriate management through regular mowing, fertiliser application or tree planting.
- (c) Fragmentation and disturbance from development such as road construction.
- (d) Nutrient enrichment (eutrophication), particularly deposition of nitrogen compounds emitted from car exhausts.
- (e) Management constraints eg. stock availability, public access.
- (f) Limited opportunity for expansion of habitat.
- (g) Increasing recreational pressure and illegal parking.
- (h) Management of water table and water quality.
- (i) Arson and accidental fires.
- (j) Increasing awareness of heathland ecology amongst the public.
- (k) Gradual extension of fringes of heathland through scrub and woodland clearance and re-establishment through re-seeding.

3 Current Action

3.1 Protection

The majority of land is under Council ownership. Keston Common and a small area of Hayes Common is a Site of Special Scientific Interest. Chislehurst and St Paul's Cray Commons, Hawkwood Estate (National Trust) and the remainder of Hayes Common are designated as Sites of Metropolitan Importance. Greater recognition of the value of local heathland sites by highway and other statutory agencies would be beneficial.

3.2 Management

4.75 ha of Hayes Common, consisting of heather patches, gorse and recent secondary woodland. Bromley Council has been applying positive management for heathland at the above and other areas of Hayes and Keston Commons for nearly 20 years. Keston Bog is managed through an agreed plan with the Environment Agency and English Nature.

The London Borough of Bromley, Friends of Hayes Common, Chislehurst and St. Paul's Cray Common Conservators, Orpington Field Club and National Trust have undertaken considerable amount of restoration and creation work over the period of the last BBAP. Countryside Stewardship Scheme funding has been secured to support heathland management, management plans for key Council-owned sites were updated during 2005 and a management plan has been produced by the Conservators. Tailored proposals have been drawn up for all sites as part of the London Heathland Recovery Strategy, within constraints.

Bromley Council has been attending the 'London Heathland Working Group', set up under the London Biodiversity Action Plan. Seminars have been undertaken across London to promote heathland, including the hosting of the London Heathland Forum in Bromley in 2004. A LBP management practice booklet was produced during 2005. Leaflet promoting London's heathland has

been produced. A HLF-funded 'London's Heathland Heritage' will raise awareness of the importance of London's heathland in the past and help promote understanding of the importance of remaining areas, including the need for management and restoration.

Walks to targeted groups and the public have been arranged on heathland, including a tour by Councillors to Hayes Common and Keston Common in 2004. Reptile surveys continued on Hayes Common.

A Heathland and Acid Grassland Working Group in Bromley will facilitate cooperation and exchange of advice in managing the Borough's heathland and acid grassland habitats and the species they support.

4 Key species (not exclusive)

Flagship Species:

Flora: dwarf gorse, bilberry, cross-leaved heath, bog asphodel, common cotton grass, 8 bog-moss species, lousewort, lichens, heather, bell heather, harebell, common cow-wheat, heath bedstraw, crow garlic, heathland grasses such as fine-leaved sheep's fescue.

Fauna: adder, common lizard, slow-worm.

Negative indicators:

Tarmac, bracken, birch and other trees, purple moor grass on mire.

Retrievables:

Lousewort, possibly sundew

5 Proposed Specific Action

Actions	Targets
Lowland Heathland and Mire Policy & Strategy	
1 Support and contribute to action under the LBP.	1a Ongoing; attend 'London Heathland Working Group'.
2 Support the implementation of the 'London Heathland Recovery Strategy' for protecting, managing, creating and restoring heathland in London.	2a Ongoing. 2b Ensure local delivery of strategy by ensuring coordination of management plans drawn up by individual landowners, so that site specific effort help towards the creation of corridors; ongoing.
3 Ensure consideration is given to heathland through the planning process and in the implementation of highway or other statutory works.	3a Ongoing through the planning process; promote through development guidelines. 3b Promote importance to relevant agencies as part of hedgerow/verge strategy and promote to relevant agencies through local (ongoing) and LBP guidelines. (Link to Transport Routes and Generic Actions).
4 Hold regular meetings of the 'Heathland & Acid Grassland Action Group' locally.	4a Ongoing.
Lowland Heathland and Mire Management & Creation	

<p>5 Continue to manage well-established Council-owned examples of heathland and mire to enhance their nature conservation quality, ensuring all are covered by management plans.</p> <p>6 Maintain newly-restored sites and further restore and create new areas of heathland.</p> <p>7 Provide opportunities for practical involvement.</p>	<p>5a Implement Countryside Stewardship Schemes on Keston & Hayes Common.</p> <p>6a Implement management plans and action on Hayes Common, St. Paul's Cray Common and Hawkwood Estate (eg. tree clearance, scrapes, control of competing species, connecting fragments within each site; ongoing.</p> <p>7a Through Friends of Hayes Common, National Trust volunteers, Orpington Field Club, Chislehurst Conservators; ongoing.</p> <p>7b Through the involvement of other specific groups (eg. schools); organise at least one event by 2009.</p>
<p>Lowland Heathland and Mire Advice</p>	
<p>8 Ensure availability of information on management techniques and value of heathland and mire for all landowners, including the availability of grants.</p>	<p>8a Disseminate best practice management guidelines booklet to Bromley's heathland site managers, produced by LBP.</p> <p>8b Hold at least one workshop/seminar locally by 2009.</p> <p>8c Promote heathland as part of local developers guidelines; ongoing.</p>
<p>Lowland Heathland and Mire Research & Monitoring</p>	
<p>9 Undertake and update Phase II/NVC surveys on all heathland and mire SINCS and SSSIs in Bromley.</p> <p>10 Monitor key heathland species for monitoring and their specific requirements, identified by LBP, and other generic species.</p>	<p>9a Undertake surveys locally or as part of regional effort during 2007, or by 2009.</p> <p>10a Continue informal surveying of reptiles at Hayes Common on an annual basis and undertake more extensive work by 2009.</p> <p>10b Commence surveying of species on selected sites by 2009, under guidance of LBP Working Group and local strategy.</p> <p>10c Consider and implement surveys for other species by trained volunteers or contract surveyors (eg. butterflies, bumblebees, lichens); at least one by 2009.</p> <p>10d Undertake surveys which build on observations made by Charles Darwin, as part of the proposed World Heritage Site bid.</p>
<p>Lowland Heathland and Mire Awareness</p>	
<p>11 Hold walks, talks and events on heathland and mire</p>	<p>11a Hold at least one event per year</p> <p>11b Consider the 'heathland package' of events in the Borough over a weekend and</p>

<p>12 Promote habitats to ward councillors.</p> <p>13 Develop potential with regard to educational use of publicly accessible heathland sites.</p> <p>14 Promote the value of London's heathland resource.</p> <p>15 Promote the of work of Charles Darwin undertaken on heathland and mire occurring within the proposed World Heritage Site.</p>	<p>implement if appropriate by 2009.</p> <p>11c Join in with London-wide promotion of events devised by LBP.</p> <p>12a Organise at least one site visit by 2009.</p> <p>13a Building on knowledge of current use drawn together by LBP, implement action as part of LBP working group; ongoing.</p> <p>14a Promote leaflet produced by LBP working group to residents living alongside heathland and more widely.</p> <p>14b Implement 'Your Heritage HLF bid 'London's Heathland Heritage' (eg. displays, information packs).</p> <p>15a Raise awareness of the observations made as part of the WHS bid and through specific projects and events.</p>
--	--

6 Responsible bodies

London Borough of Bromley, English Nature, DEFRA, National Trust and Chislehurst and St. Paul's Cray Conservators, landowners, Corporation of London, London Biodiversity Partnership.

7 Complementary plans

Lowland Heath is a priority key habitat under the UK Plan and an action plan and broad habitat statement has been produced. The LBP has a habitat action plan for heathland.

Other related BBAP action plans include: butterflies, wetland.

WETLAND

“When a duck suddenly emerges from a pond covered with duck-weed, I have twice seen these little plants adhering to its back...I suspended a duck’s feet... in an aquarium... I found that numbers of the extremely minute ... Just hatched shells crawled on the feet, and clung to them so firmly that when taken out of the water they could not be jarred off” (Charles Darwin).

Wetland habitats in the Borough include ponds, lakes, and rivers. A great variety of plants grow in wetland, ranging from floating plants in open water to marginal plants in marshy areas. The boundaries of wetland are often unclear, but blur into the wider landscape.. Determining factors on the range of species found include water level, flow and quality. Wetland is particularly important for amphibians, invertebrates and birds. Invertebrates are particularly indicative of habitat quality and type.

VISION: Water, essential for life, is too often overlooked; we need to restore appreciation of Bromley’s wetlands, which support important wildlife such as great crested newt, dragonflies and kingfisher.

AIMS:

- *To safeguard and enhance existing wetland habitat and increase the area of wetland.*
- *To provide links between fragments of wetland habitat and establish buffer zones around wetland.*
- *To monitor, survey and appraise the extent and ecological quality of wetland and their dependant species.*
- *To maintain and improve water quality of rivers traditionally supporting good fishery populations*

1 Current status

1.1 Area & Distribution

There are 450kms of rivers and streams, including the Thames, in Greater London. Bromley’s main rivers, the Ravensbourne and Cray, rise from the chalk aquifer of the North Downs and run northward to the River Thames. There are 30kms of river courses, including tributaries, spread across the northern half of the Borough. The Ravensbourne originates at Keston and leaves the Borough near Shortlands; the Cray originates in Orpington and leaves the Borough via the lakes at Ruxley. Tributaries include the Beck and Kyd Brook. 200m of ‘new’ river have been created at Norman Park through the destruction of a culvert and the landscaping of a new channel. Enhancement has also been undertaken at Shaftesbury Park.

Ponds are found throughout the Borough. Their full extent is unknown as only a proportion are actually mapped. There are an estimated 250 mapped ponds and the majority are under private ownership. Ponds tend to be concentrated in the semi-natural areas of the Green Belt, in open spaces such as parks and golf courses, and also in private gardens. Ponds have also been created on farmland, such as Bottom Barn Farm. There are relatively few ponds on the chalk. Garden ponds are thought to make a significant contribution to the overall pond resource; a student study of some

gardens in the Borough in 1997 suggested that 1 in 4 gardens had a pond. The location of some garden ponds has been established through reports of amphibians visiting them.

Ponds can be permanent or seasonal (filled with water during the wettest parts of the year only); both can provide important habitat. Existing data suggests that as many as 15% of mapped ponds may be seasonal. Ponds can be of varying size, between 1m² and 2ha, and are filled with water for at least four months of the year. Bromley is likely to be important in London for its pond resource as it has the remnants of historic estates and traditional landscapes.

Lakes occupy around 24ha of the Borough. The most significant of these was developed as a result of gravel extraction at Ruxley along the River Cray, and are now managed for angling and nature conservation. They tend to be located on the rivers.

Transition zones, swamp & fen, valley mire, wet grassland and carr woodland all contribute to the overall wetland habitat; the latter three are addressed in other action plans.

1.2 Trends

Urbanisation has led to channel straightening, culverting and narrowing of the natural river corridor so that few semi-natural features exist. Risk of flooding in populated areas, prevalence of pollution and domination of flow regimes by run-off are all factors of concern. In their upper reaches, the rivers mostly follow a natural course and predominantly occur within rural, semi-natural situations. The fairly good water quality supports a variety of macro-invertebrate species, which are otherwise rare in south London, some of these are pollution sensitive. The rivers in these rural areas of Bromley will continue to support a good range of invertebrates if negative 'urbanising' effects and agricultural and amenity operations close to the edge of the system are limited. Opportunities for river corridor enhancement and restoration exist, but cost and impact on a landholdings limits progress. These networks help provide wildlife connections between otherwise isolated sites of nature conservation value.

The 1990 National Pond Survey states that 65% of ponds had been lost in Britain over the previous 100 years. The Lowland Ponds Survey 1996 suggests that 15,000 new, generally small (<0.04ha) ponds were created in the interim and an estimated 17,000 lost during the same period, particularly in arable and pastoral landscapes. There is an estimated continuing rate of loss of 1% per year. The amount of open water in Kent has doubled over the last thirty years, mainly as a result of reservoir building and the flooding of gravel pits; however, a significant decline in the number of ponds has occurred during this time too. In Bromley, a 1997 Council survey revealed that around a quarter of mapped ponds no longer exist on the ground. Infilling of ponds for the purposes of development, landscaping or cultivation is occurring.

Of the London Boroughs, Bromley is one of the most highly valued for its great crested newt populations, a protected species. However, it is a species in decline across London and internationally. Amphibian surveys of over 100 ponds in 2002 and 2003 showed great crested newt populations to be small and vulnerable to change. Palmate newts are also found in the Borough and are uncommon in London. Ponds provide habitat for other amphibians, a number of invertebrates (including dragonflies and damselflies), bats, birds and plant species. These species rely on wetland habitats and their surroundings.

Garden ponds are becoming an increasingly important part of the wetland resource; it is estimated that 1 in 10 gardens in London has a pond. Though becoming increasingly popular, wildlife is not always a primary consideration. Intensive management of sites and a desire for: a high proportion of open water; unusual, exotic plants; keeping fish, remains the norm. These have a significant impact on the range of species found. Effort continues to be placed on encouraging wetland owners and managers to place wildlife higher up the agenda. A 'neighbourhood approach' to amphibian conservation is being promoted in Shortlands.

Lakes are areas of water greater than 2ha in size. Few lakes occur in Bromley. Ruxley Lakes are of national importance, particularly for birds, and are designated as a SSSI. A partnership of organisations led by Kent Wildlife Trust has been successful in securing funding for surveys and management review of the lakes under the Aggregates Levy Sustainability Fund. Other examples include the parkland lakes at Kelsey Park or Rookery Lake, which is privately owned. They can support a similar range of species as ponds, where management and fish stocking is not too intensive. Once created, there is little threat of lakes being filled in. It is unlikely the lake resource in Bromley will increase significantly and therefore effort must be focussed on enhancing the quality of existing sites. Much effort has been placed in promoting interest in bird life at Kelsey Park lakes during the period of 2nd Edition BBAP, including through Heron Days and interpretation boards.

The density of ponds and lakes can influence their relative value for wildlife. Close proximity of these 'stepping stones' in a 'pondscape' can assist colonisation, breeding and feeding of associated wetland species.

Wetlands in urban areas often suffer from recreational pressure, including intensive angling and excessive feeding of wildfowl, which also attracts rats.

A buffer zone around a wetland is an area of land that provides additional habitat for wetland species. It also helps to intercept the worst of agricultural or urban pollutants and shields the wetland from disturbance. Buffer zones have come under increasing pressure for other land uses, although now their importance is being recognised. In most cases adequate buffer zones are little considered. Wildlife corridors linking wetlands would help reduce the effects of fragmentation.

Collection of ecological data in rivers and ponds in urban areas and on privately owned land is often difficult, as the majority is not accessible and permission restricted, sometimes due to safety concerns.

Succession is occurring in still water bodies such as Ruxley Lakes, where woodland is developing on marshy areas. However, the mid-successional stage remains the most represented phase in the Borough, and the presence of a range of stages would not be detrimental to wildlife.

2 Current Factors Affecting the Habitat

- (a) Widely fluctuating annual rainfall has led to drought conditions in the 1990s and flooding in the 2000s.
- (b) Water abstraction from rivers
- (c) Disturbance and damage of wetland habitat as a result of recreational use.
- (d) Eutrophication and pollution (e.g. sewage contamination, dumping of rubbish).

- (e) The spread of invasive and non-native species, including Crassula, Signal crayfish and Canada Geese.
- (f) Creation of wetland habitats within gardens and on farmland.
- (g) Viruses such as red leg disease of frogs and the Phytophthora disease of alder trees.
- (h) Ecological succession.
- (i) Filling in of ponds.
- (j) Intensive use for ornamental fish and fisheries.
- (k) Increasing range of dragonfly species.

3 Current Action

3.1 Protection

Ruxley Lakes are designated as a SSSI. Much of the riverside habitat in the upper reaches of the Ravensbourne and Cray is designated as SINC. A number of ponds are important features within other SINCS. Scadbury Park, for example, has numerous ponds and is also a Local Nature Reserve.

There is no direct protection for ponds. Sites may be protected indirectly if protected species, such as the great crested newt, occur. Planning permission is required for engineering operations and trees covered by TPOs around wetland.

The Environment Agency has a statutory responsibility to protect and manage some wetland and has the power to issue licences (e.g. abstraction), or to prosecute (eg. pollution).

3.2 Management

The Environment Agency has undertaken improvement work along the River Beck, at Langley Court and Keston Bog, for example. It has also produced Local Environment Agency Plans (LEAPs) for the Ravensbourne and Marsh Dykes (1998) and the Darent (1999) which covers the Cray River. Restoration of natural river channels and enhancement of riverside habitat occurs (eg. Kangley Bridge Road, Norman Park).

The Parks and Open Spaces Strategy incorporates wetland management and conservation work is coordinated on a number of Council-owned sites with the help of voluntary bodies such as Friends of Jubilee Country Park and New Deal team (eg. Betts Park Canal). Management of the Civic Centre, Kelsey Park and Crystal Palace Park water bodies continues. The Council has encouraged schools to establish many wildlife gardens, which have included ponds. Lagoons have been created to control run-off from urbanised areas, but with run-off polluted and vegetation interest limited, their value is minimal to wildlife (e.g. A21 Pratts Bottom and Oaklands Lane, Biggin Hill). The Countryside Management Service is approached by private landowners for advice and management of wetlands and also seeks out new opportunities for wetland creation & enhancement in the Green Belt (eg. Camden Park Golf Course). London Wildlife Trust is responsible for the management of the pond at 'The Warren', St. Mary Cray. English Nature, the Environment Agency and Kent Wildlife Trust have responsibility for Ruxley Lakes. Though garden ponds may not be managed by their owners specifically for wildlife, some species, especially amphibians, are able to breed there or use them as 'stepping stones' to other wetland. New ponds continue to be created in gardens, schools, and golf courses and on farms (eg. award winning Kelsey Park School, Cudham School). Schools and

landowners are advised on the management of wildlife ponds by the Council and organisations such as Froglife.

The Countryside Management Service undertook a random survey of ponds in 1997, which mainly focussed on vegetative communities. Surveys of individual ponds and lakes are likely to have been undertaken by students, land managers and Kent and London Wildlife Trusts on SINC's. The London Wildlife Trust in 1988 undertook an ecological survey of the Ravensbourne Catchments. Records of particular wetland species have been collected by some organisations (eg. 40 years of bird records at Ruxley Lakes; dragonfly records by the Orpington Field Club). Trained surveyors to date have gathered dragonfly records; these have been supplemented by sightings made by the public, following the production of a simple survey form. The London Amphibian & Reptile Group undertook a London-wide survey of ponds important for great crested newts in 1996. Local sightings of amphibians by the public have been collected since 2000, encouraged through press releases and survey forms. Amphibian surveys were undertaken in 2002 and 2003. No evidence was found of water shrews or water voles in a small targeted survey undertaken by trained surveyors in 2002. A captive-bred population of water voles was released at a site in Bromley. The Pond Conservation Trust undertook an invertebrate survey of three seasonal ponds in 2001.

At least 10 events on a wetland theme have been organised per year as part of 'Bromley's Wetland Campaign', since 2000. These promote wetland species, creation and management techniques.

It is hoped that during the 3rd Edition BBAP any records relating to a particular pond will be compiled to promote management appropriate to available information.

4 Key species (not exclusive)

Flagship species

Flora: Ivy leaved crowfoot, bladder sedge, mares tail, nodding bur marigold, black sedge, curled pondweed.

Fauna: Great crested newt, kingfisher, reed bunting, reed warbler, water voles?, *Goera pilosa* (a caddisfly), *Nemurella picteti* (a stonefly), *Isoperla grammatica* (a stonefly), minor fish species eg. stickleback, minnows, heron. Grass snake, grey wagtail, dragonflies and damselflies, Daubenton's bat, water shrew?, amphibians, sedge warbler, heron, little grebe, great crested grebe, water rail.

Negative indicators

Flora: New Zealand Stonecrop, Japanese Knotweed, Himalayan balsam, curly water-thyme, Canadian pondweed, floating pennywort, parrots-feather.

Fauna: Brown rat, Chinese mitten crab, red-eared terrapin, and Signal crayfish.

Other: Pollution, algal blooms

Retrievables

Fauna: Water vole, native crayfish, minor fish species (eg. eel, gudgeon).

5 Proposed Specific Action

Actions	Targets
Wetland Policy & Strategy	
<ol style="list-style-type: none"> 1 Implement the 'Wetlands for Wildlife Strategy' 2 Safeguard and enhance existing wetland habitat, particularly those which are significant for protected species. 3 Support regional and national biodiversity action plans or strategies, contribute to reviews and implement relevant action. 4 Hold regular meetings of the Wetland Action Group 5 Contribute towards and learn from local and regional strategic projects. 	<ol style="list-style-type: none"> 1a Promote principles outlined 'Wetlands for Wildlife Strategy' via Bromley Knowledge 2a Through the planning process; ongoing 2b Through other legislation, eg. SSSI; ongoing. 3a Ongoing (eg. Local Environment Agency Plans for the Ravensbourne & Darent Valleys; London Biodiversity Partnership). 4a Ongoing 5a Ongoing, including River Cray Regeneration Project and Ruxley Lakes Regeneration Project.
Wetland Management & Creation	
<ol style="list-style-type: none"> 6 Devise targeting strategy and vision for pond management and creation and stretches for river enhancement and terrestrial links, to supplement the 'Wetlands for Wildlife Strategy'. 7 Produce and implement management plans for all great crested newt ponds and those in SINC's or supporting palmate newts. 8 Council-owned property with riverside and pond, especially forming part of SINC's, to be under good management. 9 Ensure establishment and management of buffer zones and corridors/connections between ponds and lakes. 10 Create ponds on Council-owned or private landholdings, giving particular priority to areas within 1km of other existing ponds. 11 Remove invasive exotic species from wetland sites. 	<ol style="list-style-type: none"> 6a Identify wetlands, especially those within or close to SINC's or supporting great crested newts, on GIS. 6b Draw up targeting strategy by end of 2006. 7a Draw up plans for all key great crested newt sites (meta-populations) by end of 2006. 7b Implement plans (also targetting neighbouring properties as appropriate), seeking trend towards 'favourable status' for great crested newts by 2009. 8a All sites to incorporate wetland management objectives and targets within management plans by 2009 and to undergo regular review. 9a Target Jubilee Country Park ponds through fencing sensitive ponds; ongoing. 9b At least 5m buffer zones on 4 sites by 2009. 9c At least three 'sites' where links have been created or enhanced by 2009. 10a Create 10 new 'wildlife' ponds by 2009 in accordance with strategy. 11a Ensure ongoing control (eg. Japanese knotweed, terrapins) is undertaken on

Actions	Targets
Wetland Policy & Strategy	
<p>12 Improve and promote the recovery of degraded stretches of the river corridor, especially for target species.</p> <p>13 Seek opportunity for Sustainable Urban Drainage Systems as part of new development and highway works where possible.</p> <p>14 Support the River Cray Environmental Regeneration Programme.</p> <p>15i Support and implement Aggregates Levy Fund at Ruxley Lakes.</p>	<p>Council-owned sites.</p> <p>11b Encourage management on private-owned sites and provide support as necessary; ongoing.</p> <p>12a Target Beck Corridor by 2007.</p> <p>12a Implement as opportunity arises.</p> <p>13 Ongoing.</p> <p>14a Contribute towards efforts identified, especially where source in the Borough affects efforts downstream (eg. Japanese knotweed).</p> <p>14b Liaise with Bexley Council to learn from and take on board outcomes of project (eg. River Wardens Scheme, education pack).</p> <p>15a Promote communication and joint working through steering group; ongoing.</p> <p>15b Implement actions; ongoing.</p>
Wetland Advisory	
<p>15 ii Provide advice to private landowners on pond and riverside management and pond creation, including the promotion of grant schemes.</p>	<p>15a Inform through talks, events and workshops.</p> <p>15b Ongoing adhoc and on-site (for larger landholders) advice</p> <p>15c Provide general advice to schools; promote good practice already undertaken in schools (Link to Urban Habitats)</p> <p>15d Target SINC owners, promoting information on Bromley Knowledge; ongoing.</p> <p>15e Maintain regular contact and guidance to to all owners of ponds visited during 2002 Amphibian Survey.</p> <p>15f Focus on neighbourhood areas to stimulate positive change; at least 1 by 2009.</p> <p>15g Promote through Greening Bromley's Gardens; ongoing.</p>
Wetland Research & Monitoring	
<p>16 Undertake targeted recording of key species identified by the Wetland Action Group (amphibians, Odonata, small mammals).</p>	<p>16a Continue to input records and undertake surveys of dragonflies on various sites; target sites supporting great crested newts and within SINC's, at least 5 by 2009.</p> <p>16b Identify priorities for amphibian survey</p>

Actions	Targets
Wetland Policy & Strategy	
<p>17 Collate all ecological and site information available in relation to ponds and other wetlands on GIS/Recorder</p> <p>18 Record unmapped ponds on GIS as they come to light, including those in urban areas.</p> <p>19 Encourage the public to report sightings of amphibians, dragonflies/damselflies, kingfishers, grey wagtail, grass snake, herons, bats and water voles.</p> <p>20 Organise a survey of invertebrates in a selection of ponds.</p> <p>21 Continue the surveying of algae at existing sites.</p>	<p>work on an annual basis, using procedures adopted under the 2002/3 Amphibian Survey.</p> <p>16c Review need for training on an ongoing basis; deliver as appropriate.</p> <p>16d Monitor captive-bred water vole population released in 2002 in St. Mary Cray.</p> <p>16e Action for bats implemented under Bat SAP, (eg. creation of roost sites beside wetland, care over bridge maintenance by wetlands).</p> <p>17a By 2007</p> <p>18 a From 2006</p> <p>19a Ongoing.</p> <p>19b Encourage schools to get involved; target 3 schools by 2007.</p> <p>19c Target angling clubs; at least 1 by 2009.</p> <p>20a 5 ponds by 2009, according to targeting strategy</p> <p>20b Provide training of invertebrates for certain species; at least 1 by 2009.</p> <p>21a Ongoing.</p>
Wetland Awareness	
<p>22 Promote ponds as wildlife habitats through walks, talks and events and emphasise the importance of terrestrial habitat for wetland species and highlight the impact of introduced species on wetlands.</p> <p>23 Consolidate old sketches and photographs of Bromley's wetlands and co-ordinate the photographing of existing ponds/lakes.</p>	<p>22a Ensure promotion of garden pond creation through at least two events or displays per annum; promote via the Greening Bromley's Gardens campaign.</p> <p>22b Promote a programme of public events through 'Bromley's Wetlands Campaign' fliers and 'Walks, Talks and Events' leaflet; annually.</p> <p>22c Provide information via Bromley Knowledge and promote via garden leaflets.</p> <p>23a Photograph all key sites by 2009; (particularly encouraging photography during species surveys and when undertaking significant management) and at least every 5 years.</p>

Actions	Targets
Wetland Policy & Strategy	
<p>24 Publicise survey work.</p> <p>25 Promote management and creation projects and important species via open days and events.</p>	<p>23b Link photos with other collated information</p> <p>23c Promote historical information on the web.</p> <p>24a Ongoing, through publications, press and events; to/via garden centres from 2003.</p> <p>25a As appropriate through press and Bromley Knowledge.</p> <p>25b At least 2 events on Council-owned land by 2009; consider one incorporating privately-owned land by 2009.</p> <p>25c Promote achievements of the Beck Corridor (SUN Project)</p> <p>25d Consider open days for schools.</p> <p>25e Promote herons through the work of the Bird Action Group.</p>

6 Responsible bodies

London Borough of Bromley, Kent Wildlife Trust, English Nature, DEFRA, London Wildlife Trust, Orpington Field Club, Environment Agency, London Water Vole Project, Angling Clubs, Kent Reptile & Amphibian Group, Froglife, Kent Mammal Group, Angling Clubs, GLA, garden associations, garden centres, Bromley RSPB, London Biodiversity Partnership.

7 Complementary plans

'Standing Open Water & Canals' and 'Rivers and Streams' are included as broad habitat statements. Relevant UK priority habitat action plans exist for Eutrophic Standing Waters (and Chalk Rivers, in original UK Plan 1995). A Water Vole & Great Crested Newt UK Species Action Plan exists. The LBP includes Species Action Plans for bats, water vole and grey heron. Also a habitat audit for Ponds, Lakes and Reservoirs exists. The Mayor's Biodiversity Strategy highlights 'The Thames, its tributaries and London's canals' and 'Ponds and lakes' as important features of London.

Other related BBAP action plans include: lowland heath and mire, urban habitats, woodland (carr).

FARMED LAND

“Nearly all the land is ploughed, and is often left fallow, which gives the country a naked red look or not infrequently white, from a covering of chalk laid on by the farm. This is said to have been the practice of the country ever since the period of the Romans ...”

Land has been farmed in Britain since Neolithic times (6,000 B.C.). In England, tilled land forms 41% of the land area; 63% of arable land in Britain comprises of cereals (UK BAP). In Bromley, a significant proportion of the Green Belt countryside comprises of arable and horticultural land, hay and silage fields and horse paddock areas. A small number of landholdings are stocked with sheep on a permanent or seasonal basis, the majority on improved grassland.

This Habitat Action Plan incorporates the whole range of land types listed above and excludes all the specific habitats mentioned in previous Habitat Action Plans. Farmed land does not occur in isolation of course; but is juxtaposed to these habitats, and wildlife takes advantage of both.

VISION: Food production and biodiversity to be integrated and complementary.

AIMS:

- *To support the wildlife enhancement of existing farmed land.*
- *To translate national objectives at the local level, primarily through the uptake of Government grants.*

1 Current Status

1.1 Area & Distribution

The overall farmland resource in London declined by 30% between 1965 and 1997. This has primarily been due to a demand for land for housing and other purposes, such as recreational use. 8% of Greater London is currently farmland* (12,872 ha, MAFF 1997); the majority of this is made up of arable (27%) and grassland (44%). The London Borough of Bromley has 30% of London's farmland. In Bromley, most of the 'best and most versatile' agricultural land is Grade 3a, a small amount Grade 2.

Farmed land occurs throughout Bromley's Green Belt countryside. Many small landholdings exist; whilst larger estates, such as Charmwood Farm, occur. Council-owned farms, all run by tenant farmers, total approximately 850 hectares. Goringes Farm, Scadbury Park Estate and Wickham Court Farm are some of the key landholdings; all lying close to the edge of the Green Belt boundary.

(* farmland is defined in these statistic as arable, other (vegetables and feed), bare fallow, permanent grassland of more than 5 years, recent and temporary grassland of less than 5 years, crops and fallow (tillage), rough grazing, set aside and woodland on agricultural land, orchards).

1.2 Trends

The British landscape changed dramatically in the 1950s, when the strive for self-sufficiency hastened in association with greater farm subsidy provision, and accelerated research in science and engineering. Advanced farm equipment; the development of artificial fertilisers and pesticides and the associated change from mixed farming to arable land have been key.

The joining of the 'Common Market' in the 1970s, meant that much of Britain's arable and stock grazing was supported by European grants. This led to the expansion of cultivation into marginal lands and a rise in stocking levels. Since the 1980's, farmers have been encouraged to diversify their incomes; receiving compensation for land put out of production (set-aside) and incentives for wildlife and landscape management.

Agricultural de-intensification is the current trend in areas where productivity is not optimal. The importance of farmed land for generating tourism, providing favourable areas for biodiversity and managing water resources, for example, is being recognised. Increased environmental awareness has increased concern over wide-ranging issues such as pesticide drift and food residues, medical concerns such as asthma and allergies and genetically modified crops. Farmer's markets and organic farms have developed.

The 'England Rural Development Programme', links economical, environmental and community interests, and incorporates ten land-based and project-based schemes. During 2005, Environmental Stewardship Schemes were introduced by DEFRA following extensive review of and consultation on grants, including the Countryside Stewardship Scheme (CSS). It is greatly recognised that the introduction of an Entry Level Stewardship and Higher Level Stewardship is more attractive to landowners and managers. Farmed Land and habitats associated with Farmed Land (eg. hedgerows) can benefit from the Scheme.

Game management and shooting has increased wildlife potential of farmland habitats. Field margins created or maintained to ease physical access alongside fences and hedges support wildlife. Wildlife strips, conservation headlands, beetle banks, pollen and nectar crop mixtures, field edges, game crops, set aside (such as the wild bird cover option or crop for non-food use), stubble, grassland fallows or leys (grass temporarily sown as part of the arable rotation) can benefit wildlife. Some 300 species of plants can occur in arable fields. Species that were previously considered arable weeds, such as cornflower, are now some of the rarest in Britain. Most arable 'weeds' depend on the seed bank and dormancy to ensure that populations survive in years when optimum growth conditions are absent. These areas provide nesting and feeding sites for game birds and some passerines; the skylark, corn bunting and lapwing nest in arable areas, selecting crop types for structural suitability. Around 2000 invertebrates (excluding soil-based and micro-organisms) breed in around crops margins; butterflies, grass hoppers, plant bugs and ground beetles are amongst these. Most mammal species are found in a range of habitats, remaining populations of brown hare in London are confined to arable areas.

During the 16th & 17th Centuries, much of the grazing land around the North Downs and heathland of the Borough was associated with grazing on naturally occurring vegetation. Grassland has since been 'improved', having increased by approximately 90% in area in Britain over the last fifty years. Re-seeding and the increased use of pesticides and fertilisers to selectively promote certain plant

species have also led to an impoverished fauna. Silage production and high stocking densities have reduced biodiversity interest. In Bromley, most pasture land is devoted to horses, and the remainder mainly to sheep. Horse fields are frequently sub-divided and can be subject to overstocking and associated poor management.

1st Ordnance Survey maps of the Borough (1870's) show a significant number of orchards and horticultural land in the Borough, with particular concentrations in Orpington, St. Mary Cray and Chelsfield. Some businesses remain.

2 Current Factors Affecting the Habitat

- a) Increase in horse numbers, leading to division of pasture and overgrazing.
- b) Change from spring to autumn sown cereals and loss of winter stubbles.
- c) Applications of artificial fertilisers resulting in dominance of particular species.
- d) Use of insecticides, herbicides (including pre-emergence weed killers) and fungicides affecting non-target species.
- e) Loss of farmland to outdoor leisure activities.
- f) Increase in urban fringe pressures including illegal motorcycling, rubbish dumping and disturbance.
- g) Uncertainty of the Common Agricultural Policy reform
- h) Increased opportunities for the adoption of Government grant schemes.
- i) Lack of awareness and understanding of farming, the agricultural landscape and associated biodiversity amongst the urban population.
- j) Increase in pernicious weeds such as ragwort and dock.

3 Current Action & Mechanisms

3.1 Protection

The Green Belt covers over 7,700ha and represents more than half of the Borough's total area. Bromley's Unitary Development Plan states that there is a presumption against development on this land, unless very special circumstances are demonstrated. In addition, the Council will resist the irreversible development of agricultural land or land of inherent agricultural quality (where agricultural use is not current). A number of areas of farmed land fall within Sites of Importance for Nature Conservation and other designated areas. This is a material consideration when planning issues are raised.

3.2 Management

Numerous landowners already adopt practices, which enhance their holdings for wildlife. A number of farmers in Bromley have entered into the ten-year DEFRA Countryside Stewardship Scheme. Over the period of the 2nd Edition BBAP, bird surveys have been undertaken on 3 farms in the Borough; records will help monitor change.

The Council's Countryside Management Service continues to provide advice on private landholdings and Council-owned farms. It aims to secure the long-term sustainable management of the countryside by working in partnership with farmers and landowners and others. It supports practical action to conserve and enhance flora and fauna

Organisations such as the National Farmers Union and British Horse Society provide advice on land management.

4 Key species

Flagship Species and Retrievalables:

Flora:, mistletoe.

Fauna: brown hare, skylark, yellow hammer, dunnock, lapwing, corn bunting, linnet, song thrush.

Negative Indicators:

Pigeons, goose grass, ragwort, couch grass.

5 Proposed Specific Action

Actions	Targets
Farmed Land Policy & Strategy	
<p>1 Recognise the role of farmed land and highlight Green Belt and rural, farming issues as part of regional plans and forums.</p> <p>2 Protect farmed land and associated habitats through the planning process.</p> <p>3 Identify priority areas of the Borough where field margins, beetle banks and wildlife seed mixtures etc. are to be encouraged to act as wildlife corridors (in line with targeting statements under Environmental Stewardship).</p> <p>4 Hold regular meetings of the 'Farmland Action Group'.</p>	<p>1a Support objectives under the Biodiversity Strategy for England, Mayor's Biodiversity Strategy and London Biodiversity Action Plan through local implementation.</p> <p>1b Provide views as part of consultations and through relevant meetings (eg. London Parks & Green Spaces, Green Arc Approach etc.) as part of the Regional Forums</p> <p>2a Ongoing.</p> <p>3a Draw up target areas for green belt countryside by 2007.</p> <p>4a Ongoing</p> <p>4b Work closely with leads and action groups involved in promoting action on other relevant HAPs and SAPs, such as hedgerows, skylarks and song thrushes.</p>
Farmed Land Management & Creation	
<p>5 Promote good management for biodiversity on privately-owned farmed land.</p> <p>6 Encourage the adoption of environmentally sensitive practices on Council-owned farmland.</p>	<p>5a Continue existing Countryside Stewardship agreement schemes</p> <p>5b 4 landholdings under Environmental Stewardship (Higher Level) by 2009.</p> <p>6a Ongoing</p> <p>6b Continue existing Countryside Stewardship agreements.</p> <p>6c Apply for Environmental Stewardship agreements; at least 1 new agreement by 2009</p>
Farmed Land Advisory	

Actions	Targets
Farmed Land Policy & Strategy	
<p>7 Provide advice to private landowners, including the promotion of grant schemes available</p> <p>8 Provide farmers and landowners with relevant guidance.</p> <p>9 Organise workshops to promote wildlife-friendly land management.</p>	<p>7a Advise 6+ landowners a year, targeting farms/landholdings near SINCs.</p> <p>7b Seek case study of farms and special arrangements for farmers within the proposed World Heritage Site under the Environmental Stewardship Scheme through negotiation with DEFRA by/during 2006.</p> <p>8a Provide information via Bromley Knowledge website and links to relevant websites.</p> <p>9a See 'Awareness'.</p>
Farmed Land Research & Monitoring	
<p>10 Monitor changes in land use through the Phase I Habitat Survey 1995</p> <p>11 Monitor the uptake of Environmental Stewardship locally.</p> <p>12 Monitor the wildlife of field margins, set aside and similar land identified.</p> <p>13 Encourage recording of species by farm managers and landowners.</p> <p>14 Involve members of the public in recording species on farmed land alongside rights of way.</p>	<p>10a Seek the undertaking of a second Phase I Habitat Survey by 2009 to provide comparative data.</p> <p>11a Draw information from DEFRA and associated websites; review each year.</p> <p>12a Undertake a survey for harvest mice along 1km of field margin by 2009.</p> <p>12b Monitor the use of at least 3 selected areas by farmland birds throughout the year by 2009.</p> <p>12c Target at least three sites for butterfly monitoring by 2009.</p> <p>13a Ask landowners for past and present sightings on their landholdings and collate data via questionnaires or discussions with volunteer surveyors; target at least 1 area.</p> <p>14a Devise a recording system during 2006; involve walkers in recording species along selected routes, targetting at least three 'route-surveys' by 2009.</p> <p>14b Continue recording sightings on 3 farms (Link to Skylarks SAP).</p>
Farmed Land Awareness	
<p>15 Raise awareness amongst landowners of the opportunities available for enhancement of their land for wildlife, including low intensity farming and horse paddock management.</p> <p>16 Increase understanding of the farmed</p>	<p>15a Hold 'issue' site visits/workshops/training events arranged by a partnership of organisations; at least 2 by 2009.</p> <p>15b Promote existing guidance on Bromley Knowledge (eg. local guidance and guidance produced by Kent Downs AONB on horse paddock management).</p> <p>15c Publicise local and regional/national research via Bromley Knowledge.</p> <p>16a Ongoing talks, walks and events (eg.</p>

Actions	Targets
Farmed Land Policy & Strategy	
landscape to Bromley residents.	farmland birds). 16b Articles in publications including press; at least 1 by 2009. 16c Promote DEFRA leaflets produced to promote farms under Stewardship schemes. 16d Consider organising at least one open day for the public on farmed land by 2009. 16e Feature farmed land as part of lessons and local excursions undertaken by schools; at least 1 by 2009. (Link to Urban Habitats).

6 Responsible Bodies

London Borough of Bromley, farmers and landowners, Department of the Environment, Food and Rural Affairs (DEFRA), National Trust, National Farmers Union, Country Landowners Association, RSPB.

7 Complementary Plans

The UK Plan has a Priority Habitat Action Plan for Cereal Field Margins and an Improved Grassland Habitat Statement (1995). The Broad Habitat Classification for 'Arable' was redefined in 1998 to 'Arable and Horticulture'. The London Biodiversity Action Plan does not yet include a Habitat Action Plan for Farmland, but is included in the Audit.

Other related BBAP action plans include: song thrush, skylark, bats, butterflies, glow-worm, grassland.

URBAN HABITATS

“I am tempted to give one more instance showing how plants and animals, remote in the scale of nature, are bound together by a web of complex relations. I shall hereafter have occasion to show that the exotic *Lobelia fulgens* is never visited in my garden by insects, and consequently, from its peculiar structure, never sets seed.” Charles Darwin writing about his home at Down House, Bromley.

Urban habitats are a disparate group bringing nature to our doorsteps. They are more characterised by their ownership and usage, than their specific ecology. They form oases of green space in our towns and cities and may contain remnant countryside. Together they form a mosaic of areas that offer breeding sites, foraging areas and shelter. To maintain viable species populations, links between these are vital. Urban habitats can support very different communities to rural ones, but can also support those more typically associated with semi-natural habitats. These ‘urban habitats’ need not be in wholly urban areas, but can occur in the urban fringe and as elements within Bromley’s wider countryside. This habitat action plan incorporates:

- *Gardens & Allotments*
- *Urban Parks, Open Space & School Grounds (including formal managed landscapes, grounds in hospitals, colleges, golf courses, businesses, institutions, sports grounds etc.)*
- *Churchyards & Cemeteries (within and without the confines of a church, respectively)*
- *Transport Routes (eg. railway lines and sidings, road verges)*
- *Industrial Sites, Brownfield Sites & Built Structures. (eg. surface of buildings, roof tops)*

VISION: The most frequent contact with nature is on our doorsteps. We wish to develop a web of diverse urban habitats connecting where we live to the wider countryside. Song birds, red admiral, badger and slow-worm and stag beetle enrich our urban lives.

AIMS:

- *Identify the extent of urban habitat and key ‘corridors’ of urban green space.*
- *Survey urban habitats and any remnant semi-natural habitats they contain.*
- *Conserve and enhance the biodiversity of urban habitats and look for opportunities to expand corridors.*
- *Strive to provide accessible urban habitat sites within one kilometre of residential areas.*
- *Increase awareness of the role urban habitats play in supporting wildlife.*

1 Current status

1.2 Area & Distribution

No figures are currently available for urban habitats in Bromley. Half of the Borough can be considered urban.

In London, there are an estimated 30,000ha of gardens; an amazing 20% of Greater London’s land cover. Household gardens occur throughout the Borough but are of highest density in the urban

areas. Larger gardens and those located in more rural areas by nature conservation sites, have the most potential for wildlife. Back alleys between rows of houses can form local 'green corridors'.

In London, there are an estimated 17,000ha of public open space. Parks and amenity grasslands form around 13% of London's land cover. Urban parks and allotments are scattered throughout the northern half of the Borough.

Hospitals, schools & colleges, golf courses, sports grounds, burial grounds and businesses have significant grounds distributed throughout the Borough. Cemeteries cover approximately 1300ha (1% cover) of Greater London and around 28ha occurs in Bromley. Churchyards are a relatively minor resource in terms of size, covering an estimated 88ha in Greater London.

Verges form a network across the whole of the Borough. Street trees are particularly prominent in the Borough; roadside trees in rural areas tend to form part of the hedgerows. Transport for London oversee the strategic road network (eg. Red routes). The railway network was created between 1836-1936. There are 795km of open operational railway corridors in London; Bromley's railway corridor is 51km (6.4% of London's resource). Railtrack and Tramlink are the key organisations involved in the management of such transport corridors. Railway embankments form a network in the north western tip of the Borough; these thin out to a main line running east-west, which is crossed by a second, near Petts Wood, running north-west-south-east. A number cut through chalk, so exposing substrate for typical wildflowers. Land includes embankments, cuttings, stations, tunnel mouths, derelict sidings, marshalling yards and predominately incorporate grassland, scrub, woodland and ruderal vegetation.

Industrial or contaminated sites are occasional in Bromley, but ruderal communities do occur on smaller areas of 'waste-ground.'

1.2 Trends

There has been little co-ordinated study of the extent and variety of urban habitat types nationally or regionally and so the current status of these sites is unknown. There has been a steady increase in appreciation of the uniqueness, diversity and importance of urban habitat conservation of London's wildlife, but most areas are managed for aesthetic or functional reasons than in a concerted effort to conserve biodiversity. The creation of a Urban Adviser post at English Nature and the production of 'Urbio' newsletter from March 2002, focussing on urban biodiversity and human nature, is a significant step forward. The securing of SITA funding for the London region in 2005 recognised the importance contribution that city environments make to biodiversity conservation and people. In 2003, LBB secured European Union LIFE Environment Programme funding to develop innovative projects in urban settings, through stakeholder involvement. The SUN Project is relevant to the Urban Habitats action plan, but also applies to all the BBAP habitats and species action plans.

Urban green space often has great potential for increasing its biodiversity, whether the desired landscape effect is intended to be formal or informal. There has been a general move towards habitat creation and restoration throughout urban areas.

Threats to urban habitats include inappropriate management (eg. clearing shrubs, levelling ground) and 'people pressure'. Health & Safety issues also influence decisions in management of urban sites. Examples include worry over unstable grave headstones and adequacy of highway sight lines. Urban habitats are also the first areas susceptible to development. It is likely that the pressure to find housing space in London will affect urban, as well as other, habitats. The division of large gardens to give several smaller housing plots (infill and backland development) has caused considerable loss of habitat. It has been found that bird numbers and diversity in gardens decreases as resident density increases (i.e. when there is a reduction in garden size).

In recent years, greater recognition has been given to the importance of green corridors which run through urban areas. Linear stretches of vegetation such as railway land, road verges and rows of back gardens act as corridors, drawing wildlife into the city from the countryside and vice versa. These corridors also connect larger green spaces, such as parks, which provide food and shelter for a wide range of common species, as well as some rarities. Remnants of semi-natural systems can occur in urban areas too. Examples include parish boundary hedgerows, old trees which formed part of ancient woodland and flower-rich grassland in churchyards.

Changing human needs, whims or continuous changes in ownership of land determine management style and regime. This has a profound affect on wildlife associated with gardens; planting choice and use of pesticides continue to have significant impact species, whilst hard landscaping is generally of least benefit. People are increasingly encouraging wildlife into their gardens, however there are various interpretations as to what is meant by wildlife gardening. Related television programmes, demonstration gardens and events are gaining popularity and have helped to clarify best practice. Publications and press coverage (eg. English Nature's 'Gardening with Wildlife in Mind' CD) have also helped.

Public expectation for tidiness is high in parks and open spaces, but more natural areas are now being developed. Contract specifications need to be well written and monitored. Use of native species in planting schemes is not yet taken as a serious option. Little leeway is generally given to natural areas on sports sites.

The London Planning Advisory Committee 'Burial Space Need in London' (1997) refers to the need to conserve biodiversity within any reuse strategy. A well-ordered appearance to sites is still expected. There is a growing interest in green burials which may provide new opportunity for wildlife.

Road verges are being cut less frequently. Wildlife will continue to benefit from lack of human disturbance on railway routes, except where operational requirements dictate interference. Rail management is geared to preventing trees growing too close to the track, especially those with large leaf litter (eg. sycamore, ash).

Modified substrates, such as industrial waste or building rubble, can support diverse native and introduced species, forming plant and animal communities unique to cities. There has been a significant reduction in the extent of wasteland in London since the mid-1980's, due to a surge of redevelopment and reclamation. Wasteland is constantly being 'created', but the range of species occurring is dependant on the period of time a site has been in existence. Early successional stages typify the habitat. There is generally low public perception of wasteland. There is always some opportunity for wildlife to take advantage of old and new structures, though limited. Man-made

structures can form important breeding and roosting sites for species (eg. bats, birds of prey). Walls can be suitable for the colonisation of plants (eg. mosses, lichens).

People are becoming more aware of the fact that urban habitats provide more than refuges for wildlife, they also add to residents' quality of life, provide social and landscape environmental benefits. Urban habitats enable close contact with wildlife and are possibly the best way of generating public interest in it. From a survey undertaken in 1998, 'Do You Know About the Birds and the Bees', it was found that gardens are residents' most favourite place to see wildlife. Urban green spaces provide: a restful and pleasant environment for people; keep city dwellers in contact with the seasonality of nature and provide an educational resource for both formal and informal education. Urban areas of London are warmer than the surrounding rural areas; green spaces have a localised cooling effect, which increases air circulation. Urban habitats also reduce water run-off, reducing the risk of flooding. Trees and shrubs act as living filters, greatly decreasing particulate pollution in the atmosphere.

The value of accessible green space is promoted by the Mayor's Biodiversity Strategy and from 2005, 'Wildweb', which highlights accessibility of London's Sites of Importance for Nature Conservation.

2 Current Factors Affecting the Habitat

- (a) Direct loss of habitat (eg. (re)development, replacement of traditional building materials, vandalism of street trees).
- (b) Lack of status for the conservation value of wastelands and cemeteries.
- (c) Increasing popularity of habitat creation in urban areas, especially wildlife gardens.
- (d) Increasing desire for more accessible sites for the public.
- (e) Fragmentation and isolation of habitat.
- (f) Public perception that urban habitats can be 'untidy and uncared for.'
- (g) Inappropriate management and damage to habitat from pesticide and fertiliser application.
- (h) Pollution (eg. rubbish, accumulation of chemicals including salt, illegal dumping of waste materials).
- (i) Pressure and disturbance from people and pets.
- (j) Air and water quality and the affect of pollution.
- (k) Intensive management regimes, including for health & safety reasons (eg. railway embankments).
- (l) Intolerance of certain species in urban areas (eg. foxes)
- (m) Better understanding of certain species inhabiting urban areas (eg. badgers, stag beetles)
- (n) Impending exhaustion of London's burial space leading to much increased pressure to re-use graves and marginal land in churchyards and cemeteries.
- (o) Predominance of introduced species (eg. sycamore, Japanese knotweed).
- (p) The demoting of environmental education in school curriculum
- (q)** Increased interest in planning for sustainable cities and landscape design which can benefit wildlife (eg. Single Regeneration Budget).
- (r)** Greater awareness of changes in species numbers (eg. loss of sparrow, rise of magpies).

3 Current Action

3.1 Protection

Some urban sites have SINC status, but the majority do not. Holy Trinity Churchyard, for example, is designated partly because of the range of ferns and other species growing on its walls. A number of Country Parks and Local Nature Reserves occur in Bromley, and are also designated as SINC. Many open spaces in the urban area have protection from many forms of built development under the UDP, as they are classed as Metropolitan Open Land or Urban Open Space. A number of these landholdings are also under Council ownership. Thousands of trees in the urban area are protected by Tree Preservation Orders.

3.2 Management

Management of the full range of urban habitats is diverse. It is often the case that human intervention through planting, determines the structure and content of urban habitats. However a large number of plant communities in urban habitats come about as a result of natural colonisation, whether on bare substrate (eg. railway embankments, walls), or on land once intensively used by people and then 'abandoned' (eg. brownfield). Once natural succession has progressed for some time, sensitive management may be needed to maintain diversity.

The Council manages 'Closed' churchyards. Promotion of wildlife gardening in church grounds has been undertaken at St. Mark's Church, Biggin Hill and Friends of St. George's Churchyard. New community woodlands are now growing near centres of population (eg. Lilly's Wood). The Council maintains natural areas in many urban parks and is actively creating wildlife habitats in less used areas. The Chislehurst and St. Paul's Cray Common Conservators look after an area of common land to the north-eastern part of the Borough. A Council Parks & Open Spaces Strategy and Allotment Management Strategy exist. A workshop promoting reptiles and amphibians at allotments was held during 2005 as part of the SUN Project. Management plans are written for some urban habitats, with wildlife conservation as a key element (eg. Allotments).

It is difficult to gauge the full extent of management, but many residents are actively encouraging wildlife to gardens. Ponds are particularly popular and make a significant contribution to the conservation of amphibians. Birds and insects also benefit greatly from wildlife gardening. The Greening Bromley's Gardens Campaign, commenced in 1999, has helped highlight how gardeners affect and can help the environment; a Reference File has been distributed.

The RSPB continues to conduct a January Garden Bird Feeding Survey (since 1979) and also contributes to the national survey run by the British Trust for Ornithology. Green gardening and wildlife gardens in schools are promoted by the SUN Project. Three schools have been involved in the Big Schools Bird Watch. Press releases have promoted bird conservation and recording (eg. house martin records, Big Garden Birdwatch). 50 bird boxes are monitored at Chislehurst Common. Training in the monitoring of birds has been given to representatives of 14 Friends groups. Sparrow boxes have been made up and distributed to the public by both the CMS and RSPB.

A corridor approach has been promoted in the urban setting as part of the 'Beck Corridor' element of the SUN Project.

A number of schools have established wildlife gardens in their school grounds, including features such as living willow shelters. Access to natural spaces is has been promoted through the Green Chain Educational Resource Pack since 2005 and a pilot survey and associated management of 3 school ground is being undertaken as part of the SUN Project. Biodiversity is being promoted to Guide, Scout and Woodcraft Folk group members through award schemes and activity days.

4 Key species (not exclusive)

Flagship Species:

Bats, stag beetle, great crested newt, black redstart, swifts, house martins, 'wall plants' such as spleenworts and lichens, bird's-foot trefoil, song thrush, kestrel, house sparrow, great tit, blue tit, black redstart, swift, house martin, badger, hedgehog, common frog, common toad, common and palmate newts, common lizard, grass snake, slow worm, red admiral, orange tip, peacock butterfly, meadow saxifrage, ladybirds, wren, dragonflies, hedgehogs, blackbird, bumble bees.

Retrievables:

Butterflies, hedgehogs, reptiles, amphibians.

5 Proposed Specific Action

Urban Habitats General	
Actions & Targets	
1	Hold regular meetings of the Urban Habitats Action Group and relevant sub-groups (ongoing).
2	Protect trees through Tree Preservation Orders and Conservation Areas (ongoing).
3	Provide support to efforts to establish or manage non-Council 'nature reserves' in urban areas or to establish access routes through areas supporting wildlife (as appropriate).
4	Promote local, regional and national wildlife information advising developers of responsibilities and opportunities (ongoing).
5	Continue to advise residents and businesses about the harm of rubbish on wildlife habitats, and in transferring or releasing species and environmentally friendly ways of disposing of waste through Bromley Knowledge (ongoing), leaflets (targeted sites) and press releases (2 by 2009).
6	Encourage participation in surveys for target species in urban habitats (ongoing).
7	Promote nature conservation via interpretation boards, leaflets and web information associated with any of the urban habitats, including alongside promoted walking routes and in parks/country parks (ongoing).

Urban Habitats Gardens & Allotments	
Actions	Targets
Gardens & Allotments Policy & Strategy	
<p>1 Ensure sympathetic division and development of large back gardens of importance to nature conservation</p> <p>2 Ensure that the Allotment Strategy incorporates wildlife.</p> <p>3 Implement Anti-Social Behaviour Act with regard to control of neighbouring hedgerows and seek planting of native species where possible.</p> <p>4 Contribute to and promote action undertaken by LBP Gardens Working Group.</p>	<p>1a Ongoing.</p> <p>2a Ongoing</p> <p>3a Ongoing</p> <p>4a Ongoing (eg. wildlife gardening events at London Natural History Museum).</p>
Gardens & Allotments Management & Creation	
<p>5 Promote and implement biodiversity through the Allotment Strategy.</p> <p>6 Encourage the creation of ponds for amphibians and other wildlife, rather than fish, in gardens.</p>	<p>5a Target at least 3 allotments and adjacent householders to actively create and manage areas for wildlife by 2009, including creation of ponds.</p> <p>5b Raise further awareness of the value of amphibians and reptiles on all allotment sites</p> <p>5c Annually monitor area of allotments actively managed each year for wildlife.</p> <p>6a Provide information on Bromley Knowledge.</p> <p>6b Continue to promote via Reference File.</p> <p>6c Hold 2 workshops/events by 2009. (Link with Wetland HAP).</p>
Gardens & Allotments Advisory	
<p>7 Promote wildlife-friendly planting through Bromley Knowledge</p> <p>8 Promote and update the Green Gardening Reference File</p> <p>9 Hold Allotment Workshops promoting</p>	<p>7a Maintain information, promoting the planting of suitable plants for soil types and linking to other webpages eg. Plants for Postcodes.</p> <p>8a Review and update file each April and continue to stock in local libraries; promote LBP wildlife gardening guide (support and contribute to its production).</p> <p>8b Raise File profile through press releases and events.</p> <p>8c Seek new 'outlets' for File and have reserve stock for lending out to groups/establishments.</p> <p>9a Run workshop on reptiles and amphibians</p>

<p>wildlife.</p> <p>10 Support garden centres in marketing wildlife products and providing advice.</p> <p>11 Continue to promote English Nature's Wildlife Gardening CD.</p> <p>12 Promote and highlight good examples of wildlife gardens and wildlife-friendly planting.</p>	<p>by 2009.</p> <p>10a Promote SUN Garden Centre leaflet.</p> <p>11a Ongoing via libraries and lending outlets.</p> <p>12a Promote High Elms Nature Centre and St. Mark's Church as demonstration gardens via website; ongoing.</p> <p>12b Promote other good practice examples via Bromley Knowledge, (eg. nominations for Bromley Environmental Awards, seasonal flowerbeds, Beck Corridors); ongoing.</p> <p>12c Promote examples through Greening Bromley's Gardens Campaign Events Sheets and Open Gardens Scheme.</p>
Gardens & Allotments Research & Monitoring	
<p>13 Undertake the January RSPB Garden Bird Feeding Survey.</p> <p>14 Record amphibians and reptiles at Allotment sites.</p> <p>15 Promote recording of garden species locally.</p>	<p>13a Ongoing; promote via press.</p> <p>13b Target particular neighbourhoods to involve non-RSPB members; two by 2009.</p> <p>14a Ongoing; promote via newsletters.</p> <p>15a Encourage recording of particular species identified by Recording Group on Bromley Knowledge; ongoing promotion.</p>
Gardens & Allotments Awareness	
<p>16 Market green gardening via 'Greening Bromley's Gardens' events and LBP-organised events/training.</p> <p>17 Promote wildlife gardening to local Horticultural Groups and other interest groups.</p>	<p>16a Aim to market all relevant events under the Greening Bromley's Gardens Campaign banner; ongoing via events sheets and/or Walks, Talks & Events publication.</p> <p>16b Ensure relevant organisations and Council officers are aware of the Campaign and help to promote it; ongoing.</p> <p>16c Hold at least 1 event per year at local garden centres.</p> <p>16d GBG display at appropriate venues; ongoing but at least 2 times by 2009.</p> <p>16e Submit events to promotional sheets produced by LBP.</p> <p>16f Support, contribute to and promote information on wildlife gardening talks and training held throughout London.</p> <p>17a Develop further links with editors of local horticultural newsletters etc; 2 articles by 2009.</p> <p>17b Give talks to groups on green gardening</p>

<p>18 Enter 'London in Bloom', ensuring promotion of the wider environmental benefits.</p> <p>19 Promote wildlife-friendly gardening by children.</p> <p>20 Support the promotion of demonstration wildlife gardens across London.</p> <p>21 Promote SUN gardening leaflet, which outlines how to limit harm to the wider environment and promotes positive action.</p>	<p>themes; at least 3 by 2009.</p> <p>18a Ongoing; report produced and entered annually.</p> <p>19a Promote via Bromley Knowledge</p> <p>19b At least one themed display by 2009.</p> <p>20a Via London Gardens for Wildlife Working Group (LBP).</p> <p>21a Target neighbourhoods where dumping of green waste on adjacent land is an issue; ongoing.</p> <p>21b Ensure leaflet and additional information (eg. recycling) is available on Bromley Knowledge.</p>
---	--

Urban Habitats Urban Parks & Open Spaces

Actions	Targets
----------------	----------------

Urban Parks & Open Spaces Policy & Strategy

<p>1 Ensure monitoring and enhancement of biodiversity is a key aim in the Council's Parks Strategy.</p> <p>2 Identify areas that could provide natural open space for local people who have otherwise little opportunity to access such sites.</p> <p>3 Attend and contribute to London Parks and Green Spaces Forum as appropriate.</p> <p>4 The Council to inform and consult with local residents</p>	<p>1a Ongoing</p> <p>2a Produce a strategy on areas deficient in natural green space by 2007.</p> <p>3a Ongoing</p> <p>4a Ongoing, particularly via Parks Strategy, Friends Groups and volunteers, site notices, 'Park Keepers'.</p>
---	--

Urban Parks & Open Spaces Management & Creation

<p>5 Manage Council-owned urban parks and open spaces with wildlife in mind.</p> <p>6 Manage golf courses with wildlife in mind.</p>	<p>5a Ongoing review of grounds maintenance specifications.</p> <p>5b Incorporate management that supports wildlife within management plans for important areas of semi-natural vegetation and other areas with potential.</p> <p>5c Seek opportunities for habitat creation as part of the Parks Strategy rolling programme; ongoing.</p> <p>5d Support the development of advice on contract specifications through workshop; at least one by 2009.</p> <p>6a Include and review management plans on Council-owned golf courses by end of 2006.</p> <p>6b Work with privately owned golf courses to</p>
--	---

<p>7 Provide support and management direction to Friends of Groups.</p>	<p>establish management plans which take account of wildlife; 3 by 2009. 7a To existing Friends Groups; ongoing. 7b Consider creation of new Friends Groups and provide support. 7c Hold regular joint meetings of Friends Groups.</p>
<p>Urban Parks & Open Spaces Advisory</p>	
<p>8 Ensure availability of information for golf course managers on wildlife management.</p> <p>9 Support conferences and promote best practice guidelines and publications produced organisations.</p> <p>10 Support the development of advice on contract specifications.</p>	<p>8a Provide guidance via Bromley Knowledge, with relevant links to publications/organisations promoting wildlife-friendly golf course management; establish by early 2006.</p> <p>8b Promote golf courses already managing land for wildlife via Bromley Knowledge/golf course websites and highlight actions undertaken through the SUN Project.</p> <p>9a by London Parks & Nature Conservation Forum (LBP). Organised by London Parks & Nature Conservation Forum (LBP) by 2009.</p> <p>10a Organised by London Parks & Nature Conservation Forum (LBP) by 2005.</p>
<p>Urban Parks & Open Spaces Research & Monitoring</p>	
<p>11 Organise surveys in parks and open spaces.</p> <p>12 Survey golf course habitats and species.</p>	<p>11a Recording Action Group to monitor surveys being undertaken and provide direction as appropriate, in conjunction with other Action Groups.</p> <p>11b Support simple monitoring techniques for parks and the provision of training organised by LBP.</p> <p>11c Involve Friends Groups; organise at least 15 surveys (ongoing or one-off) by Friends Groups by 2009.</p> <p>11d Involve community groups (eg. residents associations) and schools; organise 4 by 2009.</p> <p>12a Involve golfers in surveying species at two sites by 2009.</p>
<p>Urban Parks & Open Spaces Awareness</p>	
<p>13 Promote biodiversity amongst youth groups, focussing on sites owned by the groups and through visits to other open spaces and parks.</p>	<p>13a Continue to implement Youth (Scout-Guide-Woodcraft Folk) SUN Project; promote more widely during 2006.</p> <p>13b Extend elements of Youth SUN Project to other youth organisations; at least two elements to 2+ groups by 2009.</p>

<p>14 Continue to organise and promote wildlife activities for children through BUZZ events.</p> <p>15 Hold walks, talks and events in parks and open spaces (public and private) to promote biodiversity and sensitive management on site.</p>	<p>13c Continue to organise guided visits by youth organisations to parks; at least 5 by 2009.</p> <p>14a Ongoing; at least 3 events on a biodiversity theme annually.</p> <p>15a Ongoing programme on Council-owned Parks & Open Spaces for the public.</p> <p>15b Events for specified groups including Friends Groups; ongoing.</p>
Urban Habitats School Grounds & Their Setting	
Actions	Targets
School Grounds Policy & Strategy	
<p>1 Liaise with Education Department.</p>	<p>1a Ongoing through Schools Sub-Group</p> <p>1b Ensure that biodiversity features in any relevant strategies.</p>
School Grounds Management & Creation	
<p>2 Manage private and Council school grounds for wildlife.</p> <p>3 Produce a directory of useful publications on British biodiversity and its links with the curriculum.</p> <p>4 Promote education packs/resources devised within or relevant to the Borough to encourage educational use of school grounds, visits to local green spaces and promoting knowledge to biodiversity to teachers and pupils.</p> <p>5 Develop teachers notes on the green belt</p>	<p>2a Promote lessons learnt from School Grounds SUN Project via Bromley Knowledge and school training/newsletters.</p> <p>2b Extend key elements of project to other schools; at least 6 other schools by 2009.</p> <p>2c Provide schools with options and guidance on management and creation in school grounds via Bromley Knowledge; devise pages during 2006.</p> <p>2d Promote good examples of school grounds and involvement of children/parents via Bromley Knowledge; include during 2006 and revise/update regularly.</p> <p>3a During 2006.</p> <p>3b Encourage teachers, education department and libraries to update regularly.</p> <p>4a Promote the 'Walking with Beetles' pack</p> <p>4b Promote the 'Green Chain Education Pack' (SUN Project).</p> <p>4c Promote education resources produced by the LBP (eg. heathland).</p> <p>4d Promote other local packs and webpages (eg. Walk for All Seasons; Youth SUN webpages)</p> <p>4e Target at least one urban and one rural school by 2009, to encourage their use of parks, open space and countryside immediately on their doorstep; use as an example.</p> <p>5a Create teachers notes and suggested</p>

<p>countryside so that awareness is raised of local conservation concerns and farming issues.</p>	<p>outline list of possible activities linked to the curriculum and make available on Bromley Knowledge during 2006.</p> <p>5b Create links to relevant websites during 2006; ongoing updates annually.</p> <p>5c Provide suggestions for walks through wider countryside, including farmed areas, using access routes and open access land.</p> <p>5d Organise at least one INSET day for teachers to visit the wider countryside by 2009.</p> <p>5e Consider linking schools with local farms for visits.</p>
<p>School Grounds Advisory</p>	
<p>6 Provide schools with clear local contacts for help.</p> <p>7 Encourage schools to share experiences of school grounds action with other schools.</p> <p>8 Organise conference for teachers in Bromley with biodiversity theme.</p>	<p>6a Promote through Bromley Knowledge and Green Chain Education Pack.</p> <p>6b Voluntary organisations, individuals and relevant Council sections to provide practical help and advice on school grounds enhancement and surveying; ongoing, at least 1 annually.</p> <p>6c Talks to staff and pupils on biodiversity; ongoing, at least 2 annually.</p> <p>6d Promote and implement supervised activities and educational teaching at Bromley Field Study Centre, High Elms Nature; ongoing.</p> <p>6e Identify other suitable sites as venues for educational teaching in the Borough (eg. youth sites).</p> <p>7a Encourage promotion of action via individual school webpages, to promote more widely, to other schools and parents.</p> <p>8a 1 by 2009; incorporate examples of biodiversity action in school grounds etc.</p>
<p>School Grounds Research & Monitoring</p>	
<p>9 Involve schools in survey work in their school grounds.</p> <p>10 Audit school grounds to highlight current</p>	<p>9a Encourage recording of particular species identified by Recording Group; ongoing promotion.</p> <p>9b Promote effort via Bromley Knowledge.</p> <p>9c Target at least 5 schools by 2009.</p> <p>9d Twin schools with Friends Groups and/or other schools and encourage sharing of records; at least 2 by 2009.</p> <p>10a Target 6 schools by 2009 to build on</p>

nature value, enhancement and educational opportunities.	School Grounds SUN efforts.
School Grounds Awareness	
11 Produce a communications strategy for effective marketing of biodiversity to teachers and between schools.	11a Devise during 2006. 11b Promoting knowledge and action for biodiversity to teachers. 11c Consider the production of an educational video promoting biodiversity issues; if to proceed, implement by 2009.
12 Promote school achievement for biodiversity action.	12a Encourage promotion of action via individual school webpages, to promote more widely to parents; at least 4 schools by 2009.
Urban Habitats Churchyards, Cemeteries and the Grounds of Places of Worship	
Actions	Targets
Churchyards & Cemeteries Policy & Strategy	
1 Keep up-to-date with efforts of Churchyards & Cemeteries Biodiversity Working Group (LBP) and contribute where possible. 2i Support and promote actions by the the Churchyards & Cemeteries Biodiversity Working Group (LBP). 2ii Encourage a strong stakeholder base and hold meetings of Action Group as appropriate.	1a Ongoing. 2a As appropriate (inc. organisation of a training workshops, disseminating publications produced, promoting forums established for site managers, supporting the development and coordination of a survey for burial grounds etc.) 2a Ongoing; involving variety of stakeholders including Parochial Parish Councils and worshippers and encouraging networking of sites.
Churchyards & Cemeteries Management & Creation	
3 Produce management plans which encourage wildlife in 'churchyards' 4 Create and manage wildlife habitats in private and public 'cemeteries' 5 Promote local and other examples of good practice. 6 Actively involve worshippers and visitors with practical management of sites.	3a Draw up outline management recommendations for all SINC churchyards by 2009. 4a Ongoing. 4b Produce and commence active implementation of one by 2009. 5a Promote via Bromley Knowledge, including links. 5b. Organise at least one event/site visit for stakeholders by 2009. 6a Organise practical workdays involving the main religions represented in the Borough; at least one practical workday by 2009.
Churchyards & Cemeteries Advisory	
7 Provide advice to all sites.	7a Identify useful leaflets, websites etc. of relevance to these sites during 2006.

<p>8 Promote conservation of wildlife interest of headstones and walls.</p>	<p>7b Provide information via Bromley Knowledge and relevant links to other guidance as well as regional/national projects; during 2006.</p> <p>7c Produce simple sheet outlining possible biodiversity of interest, grants and community involvement (for closed and open churchyards etc.) and send to all sites in the Borough; during 2006.</p> <p>8a Encourage site managers to seek advice from lichenologists and bryologists before any action is taken to lay headstones flat or treat headstones or conserve of important walls (eg. control of ivy, use of lime mortar), so that mitigation can be considered.</p> <p>8b Provide advice via Bromley Knowledge.</p> <p>8c Provide contact list of lichenologists and bryologists via working group or relevant information sources.</p>
<p>Churchyards & Cemeteries Research & Monitoring</p>	
<p>9 Seek information of the biodiversity value of .sites.</p> <p>10 Involve site managers, visitors and worshippers in survey work.</p>	<p>9a Produce a list of all sites during 2006.</p> <p>9b Consider devising a questionnaire on current wildlife value of sites; if appropriate, send out and compile information by 2009.</p> <p>9c Compile existing information on database. habitats/wildlife at sites.</p> <p>10a Target at least 1 site by 2009 for selected species (eg. hedgehogs in stronghold areas).</p>
<p>Churchyards & Cemeteries Awareness</p>	
<p>11 Raise awareness amongst local people of the biodiversity and cultural value of sites.</p> <p>12 Promote 'Friends Groups' who help maintain, survey and promote sites.</p>	<p>11a Organise at least one event by 2009, also promoting importance of lichens.</p> <p>12a Promote work of existing groups through Bromley Knowledge and open day; at least 1 open day by 2009.</p> <p>12b Consider the creation of further Friends Groups and provide support; ongoing.</p>
<p>Urban Habitats Industrial and Business Sites & Built Structures</p>	
<p>Actions</p>	<p>Targets</p>
<p>Industrial and Business Sites & Built Structures Policy & Strategy</p>	
<p>1 Ensure effective communication with key local businesses and sites.</p>	<p>1a Identify key industrial and brownfield sites, large businesses and contact details by the end of 2006.</p> <p>1b .Keep up to date with business directory for Bromley; ongoing.</p> <p>1c Establish and maintain contact with</p>

<p>2 Identify key industrial/brownfield sites with existing habitat or potential for habitat, which contributes, to wildlife corridors.</p> <p>3 Promote and contribute to work of relevant LBP working groups.</p>	<p>relevant business forums, chambers of commerce, town centre managers, institutes, rotary clubs etc.; as appropriate.</p> <p>1d Draw up overarching strategy for communication in 2006.</p> <p>1e Identify opportunity for marketing biodiversity as part of local business fairs etc.</p> <p>2a Analyse aerial photographs and other material during 2006.</p> <p>2b Identify key management objectives for these areas.</p> <p>3a As appropriate.</p>
<p>Industrial and Business Sites & Built Structures Management & Creation</p>	
<p>4 Implement wildlife management plans on industrial/business sites.</p> <p>5 Adapt or incorporate new built structures of benefit to wildlife.</p>	<p>4a Target at least two businesses or industrial estate by 2009 and promote as example of best practice.</p> <p>5a Invite businesses to make contact to receive small or 'have created' (adapted/additional) built structures for installation through press (at least one by 2009); work with sites to deliver and promote as examples of good practice via Bromley Knowledge.</p> <p>5b Target areas (businesses, sports grounds, gardens etc) along the Beck Corridor SUN Project (eg. bat roosts opportunity at Kelsey Park and in bridges over water); consider further target areas by 2009 and deliver as appropriate.</p>
<p>Industrial and Business Sites & Built Structures Advisory</p>	
<p>6 Provide advice to site owners on the existing and potential wildlife value of landholdings and how best to manage them for wildlife, and encourage the production of wildlife management plans for industrial/business sites.</p>	<p>6a Produce general guidance on Bromley Knowledge (eg. importance within wildlife corridors; availability of grants; opportunities for community involvement including site employees; drawing up management plans; information on bat tiles, green roofs, swallow-friendly sites, swift boxes and painting of lichen spores or nutrient-rich mixture on walls to encourage lichen growth etc) and market generally to contacts list twice by 2009 and in response to queries.</p> <p>6b Target key corridor sites with more detailed correspondence outlining advice by 2009 and</p>

<p>7 Promote the creation of both small-scale and more ambitious built structures benefiting wildlife.</p> <p>8 Provide guidance to developers, building and maintenance contractors and landscape architects about: incorporating features to attract wildlife as part of building design.</p> <p>9 Promote advice on maintaining walls and their associated wall flora and fauna</p>	<p>monitor response.</p> <p>6c Promote the adoption of the Wildlife Trust Scheme through Bromley Knowledge (ongoing) and publicity (at least once by 2009).</p> <p>6d Produce management plans as part of the planning process; ongoing.</p> <p>6e Give talks to groups/sites; at least 3 by 2009.</p> <p>6f Consider production of small display for business fairs, if appropriate.</p> <p>6g At least one press release by 2009.</p> <p>7a Advise private landowners and businesses etc. on the wildlife value of sites, availability of grants and possibility of community involvement.</p> <p>8a Produce guidance on Bromley Knowledge, also promoting local examples by end of 2006, (part of SUN Project).</p> <p>8b Production and distribute guidance notes & good practice to all local developers, building and maintenance contractors (eg. bridge repairs) and landscape architects by end of 2006 (as part of SUN Project).</p> <p>9a Promote as part of guidance notes to all on Bromley Knowledge by end of 2006.</p> <p>9b Target householders where important wall communities (fauna and epiphytic plants such as mosses and lichens) have been identified, and organisations such as the Historic Building Owners Group in Bromley; at least once by 2009.</p>
Industrial and Business Sites & Built Structures Research & Monitoring	
<p>10 Record important structures for wildlife (eg. bridges, ice wells and other underground features).</p> <p>11 Involve site staff, in association with trained surveyors, to monitor specific wildlife on sites.</p> <p>12 Invite the public to report sightings of species using built structures, including quirky sightings.</p>	<p>10a Incorporate on database by 2008; ongoing updates thereafter.</p> <p>11a Target at least three sites by 2009, identifying and implementing recording opportunity.</p> <p>12a Through Bromley Knowledge (ongoing) and press coverage (at least 1 by 2009).</p>
Industrial and Business Sites & Built Structures Awareness	
<p>13 Promote ongoing efforts and outcomes of SUN Project.</p> <p>14 Promote the value and establishment of built</p>	<p>13a Ongoing</p> <p>14a Produce at least three articles in relevant</p>

structures/artificial features for wildlife amongst residents, contractors etc.

publications/press by 2009.
14b Encourage small-scale 'Building for Wildlife' through events promoted via the Greening Bromley's Gardens Campaign.

Urban Habitats Transport Corridors	
Actions	Targets
Transport Corridors Policy & Strategy	
<p>1 Ensure biodiversity is a features within relevant local and regional strategies relating to transport corridors.</p> <p>2 Develop and maintain links with relevant bodies (eg. Transport for London; railway authorities)</p> <p>3 Promote and contribute to action undertaken by relevant LBP working groups.</p> <p>4 Create and promote new access routes to encourage enjoyment of biodiversity.</p>	<p>1a Produce a Hedgerow/Road Verge Strategy by 2009 (Incorporate guidance on road verge works in sensitive areas; identify key sites where sensitive management is required such as alongside SINCs etc.)</p> <p>1b Incorporate and promote as part of new Rights of Way Improvement Plan.</p> <p>1c Feature as part of integrated transport, strategic environmental assessment for transport and equivalent strategies.</p> <p>2a Ongoing.</p> <p>2b Seek grant funding and/or joint funding on relevant projects.</p> <p>3a Ongoing.</p> <p>4a Implement as part of Rights of Way Improvement Plan.</p> <p>4b Create permissive and dedicated routes as part of the planning process or through negotiations with landowners; ongoing.</p>
Transport Corridors Management & Creation	
<p>5 Council to continue to maintain and increase numbers of street trees</p> <p>6 Draw up management requirements for important verges identified as part of the hedgerow/verge strategy.</p> <p>7 Enhance and undertake other environmental improvements to verges.</p>	<p>5a Ongoing annual programme</p> <p>6a Devise and promote general management objectives as part of strategy by 2009.</p> <p>6b Establish programme of management for A21 chalk grassland by end of 2006 together with TfL.</p> <p>6c Draw up management plans for at least 2 other areas by 2009; promote as examples of good practice via Bromley Knowledge.</p> <p>7a Implement on sites forming part of the SUN Project.</p> <p>7b Create more diverse grassland habitat along 1km of verge (identified as part of strategy) by 2009.</p> <p>7c Undertake local improvements (eg. tree and shrub planting, wildflower plug planting) involving local community through SUN Project (Beck Corridor & Transport Corridor Projects).</p> <p>7d Undertake hedge-planting and appropriate</p>

<p>8 Ensure that management of trees and associated habitats along railway embankments and tramlinks takes account of nature conservation and landscape values.</p> <p>9 Establish and manage areas of wildlife interest at stations.</p> <p>10 Involve community in enhancing road verges, rights of way and promoted routes for biodiversity.</p>	<p>management along road verges in accordance with strategy. (See Hedgerows HAP).</p> <p>7e Incorporate as part of planning applications alongside access routes, existing highways or new roads forming part of developments and promote through guidance on Bromley Knowledge; ongoing.</p> <p>8a Strengthen links with railway authorities and Tramlink and encourage consultation; ongoing.</p> <p>9a Target and promote one as part of SUN Project by end of 2006.</p> <p>9b Consider further opportunities with rail authorities by 2009; implement one further project by 2009 if possible.</p> <p>10a Implement through SUN Project by end of 2006.</p> <p>10b Ongoing project implementation opportunities by various organisations; at least 10 by 2009.</p>
Transport Corridors Advisory	
<p>11 Promote care of street trees via the Tree Warden initiative.</p> <p>12 Provide advice to all private landowners bordering roads on sensitive maintenance of hedgerows and verges.</p> <p>13 Develop management guidelines for sensitive sites overseen by Transport for London.</p> <p>14 Develop appropriate management guidelines for Tramlink and Railway Authorities.</p>	<p>11a Ongoing Promote guidance.</p> <p>12a Ongoing; through on-site and adhoc advice.</p> <p>12b Address approach as part of hedgerow/verge strategy; target at least one area by 2009.</p> <p>12c Promote guidance on Bromley Knowledge by 2009.</p> <p>13a Incorporate in hedgerow/verge strategy.</p> <p>14a Consider by 2009.</p> <p>14b Council and wildlife organisations to provide advice and encouragement on issues relating to wildlife and impact of management schemes; ongoing.</p>
Transport Corridors Research & Monitoring	
<p>15 Identify and survey important verges.</p> <p>16 Monitor health of tree stock.</p> <p>17 Encourage surveying along walking routes.</p>	<p>15a See Hedgerow HAP.</p> <p>16a Ongoing with help of Council staff, Tree Wardens, the public.</p> <p>17a Promote as part of Beck Corridor SUN</p>

	<p>Project and 'Walking with Beetles'. 17b Specific species forming part of other HAPs (eg. Skylark HAP, Butterfly HAP).</p>
Transport Corridors Awareness	
<p>18 Promote biodiversity at railway and tramlink stations.</p> <p>19 Promote biodiversity on guided walks, through initiative such as Active Lifestyles and as part of walking, cycling and horseriding promoted routes and trails within the Borough.</p> <p>20 Promote the educational value of walking routes with biodiversity.</p> <p>21 Promote tree planting and other efforts through press and articles.</p> <p>22 Promote biodiversity through bus transport services.</p>	<p>18a Promote station sites encouraging wildlife amongst passengers using interpretation boards and, where possible hold open days; at least one as part of SUN Project.</p> <p>18b Promote accessible space rich in wildlife from stations/tramlink stops in biodiversity through existing leaflets (eg. LOOP, Green Chain), new walks leaflets (at least 1 incorporating transport and biodiversity information by 2009), interpretation boards (at least 1 as part of Beck Corridor SUN Project), events sheets and posters marketed at sites (eg. promoting AONB and chalk grasslands).</p> <p>19a Promote through SUN Project (eg. Walking Festival).</p> <p>20a Promote the 'Walking with Beetles' project.</p> <p>20b Promote visits outside of school grounds (see School Grounds & Their Setting section).</p> <p>21a Promote native planting along Worsley Bridge Road (SUN Project); ongoing on site.</p> <p>22a Consider the production of a local public transport/bus map in the Borough, highlighting places of biodiversity to visit in association with bus companies by 2009; implement as appropriate.</p> <p>22b Promote biodiversity at bus stops (alongside timetables/boards); at least one area by 2009.</p>

6 Responsible bodies

London Borough of Bromley, Kent Wildlife Trust, Orpington Field Club, English Nature, London Wildlife Trust, National Trust, English Heritage, schools, churches, relevant landowners, garden centres, gardeners, Allotment Associations, developers, contractors, horticultural groups and residents, London Biodiversity Partnership.

7 Complementary Plans

An Urban Habitat statement exists in the UK Plan. The LBAP includes HAPs for Built Structures, Wasteland, Churchyards & Cemeteries, Private Gardens and Parks, Squares and Amenity Grassland, Private Gardens; habitat statements exist on Parks, Amenity Grasslands and City Squares and Urban Wasteland; Railway Linesides and Churchyards and Cemeteries are also covered by the Audit (LBP Volume 1).

Other related BBAP action plans include: stag beetle, song thrush, bats, hedgehog, ancient trees, butterflies, wetland, glow-worm.

4.4 Action Plans for Key Species

STAG BEETLE (*Lucanus cervus*)

“One day on tearing off some old bark, I saw two rare beetles and seized one in each hand; and then I saw a third, a new kind, which I could not bear to lose, so that I popped the one which I held in my right hand into my mouth...”

Stag beetles can be found in broad-leaved woodland, parks and in many gardens in the Borough. The larvae live in the decaying wood of trees, often in roots and stumps, and even in rotting timber fence posts. They take at least three and a half years to become fully grown beetles. A large male can be up to 70mm in length and their most conspicuous feature is the large jaws, which resemble the antlers of a stag deer. Their size makes them easily recognisable and people unnecessarily wary; stag beetles are harmless, attacking neither people nor boring into furniture. The adults feed on tree sap and fruit and are most often seen flying during summer evenings while they are searching for a mate. The flight is often clumsy, crashing into windows and sometimes coming indoors.

VISION: Bromley is a hotspot for Britain’s largest beetle; we want everyone to welcome this remarkable resident.

AIMS:

- *Survey to assess and monitor populations;*
- *Protect existing populations through good habitat management.*
- *Encourage appreciation and respect for the beetle.*

1 Current status

1.1 Distribution

The UK is a major stronghold in Europe. However, stag beetles are now concentrated in south-east England, scarce outside London, the Thames Valley, parts of East Anglia and the New Forest.

The stag beetle has been recorded in all but four London Boroughs (LBP 2000). In south London, stag beetles are still locally common. Over 400 separate sightings were sent in from the south London area as part of a 1997/98 Bromley Biodiversity Partnership and London Wildlife Trust survey. Records revealed more dense populations in south eastern boroughs with Beckenham, Bexley and Dulwich as the London hot spots. The absence of records for some parts of the Borough may simply be due to the lack of recorders in these areas, especially in the more rural areas. Further records were collated in the 2002 National Stag Hunt and 2005 London Stag Hunt.

1.2 Trends

The stag beetle is globally threatened. Britain's largest beetle is a priority species in the UK Biodiversity Action Plan. Stag beetles are declining in numbers; they used to be far more widespread, occurring in a wide area of England and South Wales.

The stag beetle is culturally-valued; the LBP makes reference to how the species has been given many local names, for example. 'Bad publicity' has been turned around over the last eight years to highlight the species plight and slowly the public's attitude has been changing.

The greatest threat, the removal of rotting wood, remains a strong factor deterring the stag beetle's recovery, despite an increasing recognition of the value of dead wood.

With the London Borough of Bromley being one of the main strongholds of this unmistakable beetle, it is of international importance that people in Bromley enjoy and conserve *Lucanus cervus*. The 1997 'Wanted Very Much Alive' survey results were fed into a survey undertaken by the London Wildlife Trust. This survey was repeated in 1998, and fed into a national survey. The focus group, co-ordinated by the Peoples Trust for Endangered Species (PTES), produced 100,000 survey leaflets for the general public 'The Great Stag Hunt' (1998) and management guidelines for land managers ('Stags in Stumps', 1998). Michael Meacher MP launched the campaign on May 14th 1998 as part of a publicity campaign. Over 12,000 sightings were received, a third came from south London. Most records have come from gardens, not from woodland and parks, where there is likely to be under-recording. Michael Meacher MP launched the Great Stag Hunt II in June 2002; this was promoted locally and contributions made to the national survey. The 'Stag Beetle Friendly Gardening' leaflet was produced by PTES in 1999 and has been promoted to local residents and local organisations. Further information has been gathered since then, and has included a small number of more detailed Garden Surveys and Road Kill Surveys.

Richmond Park was declared a National Nature Reserve in May 2000, partly because of stag beetles. It has recently received international status as a candidate Special Area of Conservation, as has Wimbledon Common, on account of its stag beetles.

A 'The Wonder of Stag Beetles' display has been produced in partnership with English Nature, London Wildlife Trust and LB Bromley. This has been on display in various venues since 2001. Stag beetle education packs, devised by Deborah Harvey (PhD student), were circulated to all schools in the Borough in 2001.

The international 'Symposium and Workshop on the Conservation of Saproxyllic Beetles in Ancient Trees' was attended in 2002.

2 Current Factors Affecting Species

- (a) Loss of sites through urban development, unsympathetic woodland management, agriculture and 'tidiness'.
- (b) Removal of fallen timber and tree stumps, so denying breeding sites for the larvae.
- (c) The substitution of wooden garden fence posts and gates with concrete or metal.

- (d) Ignorance of the presence of stag beetles and larvae.
- (e) Predation by cats, foxes, crows and magpies
- (f) Misguided perception of the stag beetle being a pest.
- (g) Stag beetles are killed by traffic or trodden on, either accidentally or deliberately.
- (h) Increasing awareness of stag beetles by people.

3 Current Action

3.1 Protection

The stag beetle is listed on Annex II of the European Community Habitats Directive. It has recently been listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the Countryside & Rights of Way Act); its sale is prohibited.

3.2 Management

The stag beetle is one of fifteen UK Priority Species that have been identified as 'Forestry Target Species' in the 'UK SAPs: Priority for the Forestry Commission' (2000).

The London Borough of Bromley and London Wildlife Trust have been active members of the UK Stag Beetle Focus Group. London Wildlife Trust, English Nature and PTES produced 'Stag Beetle – An Advice Note for its Conservation in London', in 2000. A Species Action Plan for the stag beetle was included in Volume 2 of the London Biodiversity Action Plan in 2001. A Stag Beetle Working Group was established as part of the LBP. It is also a flagship species under the Woodland Habitat Action Plan, however it is also recognised as being an important inhabitant of open landscape with old or ancient trees, private gardens, churchyards & cemeteries, hedgerows and railway linesides.

At least 2 displays a year have promoted stag beetles within the Borough. The species is also highlighted through talks, walks and events. A stag beetle loggery and interpretation board promote stag beetles at High Elms Conservation Garden. Stag beetle loggeries are also being promoted as part of the Beck Corridor (SUN Project). Records were sought from the public during 2005 as part of the LWT Stag Beetle Survey. A London-wide workshop was organised by LWT and hosted by LBB during 2005. A TfL-funded 'Walking with Beetles' education project, aims to raise awareness amongst pupils of the wildlife they may see when travelling to school.

4 Proposed Specific Action

Actions	Targets
Stag Beetle Policy	
1 Contribute to the UK Stag Beetle Focus Group; and LBP stag beetle group	1a Ongoing.
Stag Beetle Species and land management	
2 Implement guidelines for encouraging stag beetles in woodlands (leave living trees that are partly damaged and decay; favour planting broad-leaved trees; put log piles in moist shady	2a Ongoing; all woodland management plans to adopt guidelines. (Link to Woodland HAP)

Actions	Targets
Stag Beetle Policy	
<p>conditions; keep logs in contact with the ground).</p> <p>3 Implement guidelines for encouraging stag beetles in parks, school grounds etc. (Replace any lost trees; create 'loggeries'; leave large timber rather than cutting or burning it).</p> <p>4 Implement guidelines for encouraging stag beetles on farms, hedgerows etc. (encourage hedgerow trees; allow dead wood to accumulate in hedge bottoms; don't plough too close to hedgerow trees; keep dead tree stumps).</p> <p>5 Implement guidelines for encouraging stag beetles in gardens (Create loggeries;; ensure that where relocation of larvae, is necessary, the conditions in which they were found are replicated and host rotten wood included; use timber fences; retain or relocate old wooden fence posts).</p> <p>6 Promote creation of stag beetle loggeries as part of planning applications.</p>	<p>3a Create and promote loggeries created along the Beck Corridor Project in open spaces.</p> <p>3b Create 8 designated stag beetle loggeries in other parks by 2009; ensure that all Council 'formal park' management plans include action for stag beetles (ongoing)</p> <p>3c Encourage private residents in the area to create and report creation of loggeries in the Beck Corridor.</p> <p>4a Ongoing.</p> <p>4b Produce and implement management guidelines for stag beetles in hedgerows as part of hedgerow strategy and promote via Bromley Knowledge, events, articles. (Link to Farmland HAP and Hedgerow HAP).</p> <p>5a Promote good management via Greening Bromley's Gardens inc. via Bromley Knowledge; ongoing.</p> <p>5b Ensure ongoing distribution of 'Stag Beetle Friendly Gardening' leaflet</p> <p>6a Ongoing.</p>
Stag Beetle Research & Monitoring	
<p>7 Join in with regional and national surveys and projects.</p> <p>8 Support research into breeding</p>	<p>7a Record adhoc sightings locally and resulting from publicity.</p> <p>7b Promote recording via Bromley Knowledge; encourage more enthusiastic recorders to undertake more detailed garden and road kill surveys.</p> <p>7c Encourage public involvement in areas of the borough where there appears to be an absence of sightings to better establish distribution.</p> <p>7d Build on efforts of 2005 London survey; ongoing.</p> <p>8a Through the Focus Group and LBP</p>

Actions	Targets
Stag Beetle Policy	
<p>requirements and other factors which might influence abundance</p> <p>9 Support national & international efforts to share research about the species.</p>	<p>Working Group.</p> <p>9a Through the Focus Group and LBP Working Group.</p>
Stag Beetle Awareness & Publicity	
<p>10 Maintain awareness, educate on good management and discourage deliberate destruction of adult beetles, larvae and their breeding places,(general public, inc school children, land owners & managers, tree officers, planning officers and tree contractors).</p>	<p>10a Promote to the general public via the Greening Bromley's Gardens;</p> <p>10b At least 2 press releases by 2009, also publicising good news stories ;</p> <p>10c Distribution of existing leaflets;</p> <p>10d Publicise via Council and other organisations' publications, including websites.</p> <p>10e Continue to promote stag beetles to planners and developers through guidance.</p> <p>10f Re-contact all tree contractors at least once by 2009.</p> <p>10g Promote stag beetles on guided walks (eg. Beck Corridor) and as part of land management workshops; at least 8 by 2009.</p> <p>10h Promote stag beetles to schools as part of 'Walking with Stag Beetles' project.</p>

5 Action by

People's Trust for Endangered Species, London Borough of Bromley, London Wildlife Trust, Kent Wildlife Trust, Orpington Field Club, English Nature, National Trust, London Tree Officers Association, Horticultural Associations, allotment holders, Residents' Associations, tree contractors, gardeners.

6 Complementary Plans

There is a UK action plan for the stag beetle with The People's Trust for Endangered Species taking the national lead. A Species Action Plan is included in the LBP.

Other related BBAP action plans include: woodland, hedgerows, ancient trees.

SONG THRUSH (*Turdus philomelos*)

“There were three eggs in it and I wanted to take one of them, but he told me I mustn’t. In spite of this, he went on to tell me how to blow eggs so as to preserve them” (Bunting recalls meeting Darwin when a boy).

Song thrushes are one of the most popular and familiar of our birds, equally at home in the town as in the country. They are approximately 20cm long, their upper parts are brown and underside creamy white with black spots. Males and females look identical and both sing. Flight is fast and purposeful and their song loud, clear and vigorous, distinguished by the repetition of simple musical phrases.

The song thrush can be found where there are trees and bushes with associated grassland, leaf litter or moist ground. Hedgerows, gardens, thickets and woodlands are therefore particularly important as cover, though song thrushes regularly forage in the open on a wide range of invertebrates and fruit. Song thrushes most commonly nest in bushes, trees and climbing vegetation and sometimes in buildings, banks or on the ground. They breed from Mid-March to the end of August. The period from laying of eggs to fledging lasts 34 days.

VISION: Concern for the attractively speckled song thrush needs to be met by positive action from the gardener to the farmer.

AIMS:

- *Survey to assess and monitor populations.*
- *Sustain existing breeding and wintering numbers.*
- *To increase populations of song thrushes by encouraging good habitat management and the protection of nesting sites during the breeding season.*

1 Current status

1.1 Distribution

The song thrush is found throughout Britain but mainly in Kent, East Anglia, Lincolnshire, parts of the Midlands and the Downs.

The LBP states that the song thrush has suffered past decline. Based on LNHS Bird report and observations of LEU and LWT staff, all Boroughs, except for the City of London, have breeding populations of the species. The LBP recognises that the song thrush occurs in a wide variety of habitats in London including: woodland and scrub; open landscape with old/ancient trees; private gardens, parks, amenity grassland and city squares; churchyards and cemeteries.

Song thrushes are found in reasonable numbers throughout the whole of the Borough, but hotspots are mostly in the southern half of the Borough. These include Jubilee Country Park, High Elms Country Park, the Cudham valley, the countryside around Biggin Hill, Chelsfield and Leaves Green.

1.2 Trends

A widespread species but declining throughout Europe. They have declined by 73% on farmland and 49% in woodland over the last 25 years. It has been identified by a consortium of ornithological societies, headed by the RSPB, as one of 40 species of high conservation concern (red list species). The song thrush is a priority species under the UK BAP.

Changes in farming practice, including the greater use of pesticides, are thought to have affected food supply and the availability of nest sites. In the latter case, the change from spring to autumn sown cereals is likely to have been influential. The former may provide unsuitable foraging habitat in comparison with spring-sown varieties. Severe winter weather and dry soil conditions have also affected food supplies. Predation by birds, foxes and cats and competition with other birds such as blackbirds have reduced song thrush numbers. Tidier gardens, loss of hedgerows and scrub cover are likely to have contributed to loss in numbers. An RSPB survey project undertaken between 1995-2000 on two farms in Sussex and Essex showed that food availability is affected by ground hardness, which is influenced by the presence or absence of certain landscape features.

The LBP highlights that the song thrush is indicative of habitat, culturally valued and easily recognised.

2 Current Factors Affecting Species

- (a) Intensive application of pesticides has reduced ephemeral (short lived) weeds, insect prey and the mollusc population in the wider countryside.
- (b) Autumn-sown cereals and reduction of winter stubble fields.
- (c) Reduction in extent and quality of hedgerow, scrub, woodland and grassland habitats.
- (d) Drier weather restricts food sources, making worms harder to find, for example.
- (e) Greater awareness of reduction in song thrush numbers and impact of gardeners on populations.

3 Current action

3.1 Protection

The song thrush is protected under the Wildlife & Countryside Act 1981 (as amended by the Countryside & Rights of Way Act 2000) and under the European Community Birds Directive. It is an offence to intentionally or recklessly kill, injure or take any wild bird, or take damage or destroy the nest of any wild bird while that nest is in use or being built, or to take or destroy an egg.

The song thrush habitat is protected to a limited extent by designated sites (SINCs and SSSIs). Grant schemes which tie in elements of beneficial to the species are of greatest benefit.

3.2 Management

Local awareness has been raised through the 'Wanted Very Much Alive' survey and through guided walks; information from the survey has helped to confirm the location of some song thrushes in the Borough.

Regular monitoring of some areas of the Borough has been undertaken by the local RSPB group. Regular surveys are undertaken on at least 3 farms at any one time in the Borough and recorded sent to RSPB/BTO. Greater emphasis will be placed on increasing community involvement in recording song thrushes in order to identify key areas and habitats for this species.

Some farmers have put aside land, which helps farmland birds such as the song thrush. Those farmers who have entered into DEFRA schemes are required to manage and conserve certain elements of the landscape, which is likely to help the song thrush. Creation of species-rich grasslands and further establishment of field margins will improve the situation further. Poor timing (during the breeding season) and management of hedgerows is likely to affect song thrush numbers.

No management specifically aimed at conserving the song thrush is currently undertaken but the species is likely to benefit indirectly as a result of management where wildlife is a concern. It is hoped that the promotion of wildlife-friendly gardening as part of the 'Greening Bromley's Gardens Campaign' will help the public to consider their needs.

At least 2 walks are held per year, which promote song thrush conservation.

4 Proposed Specific Action

Actions	Targets
Song Thrush Policy	
<ol style="list-style-type: none"> 1 Support the LBP targets which help to encourage song thrushes & UK BAP initiatives. 2 Ensure that management for song thrushes is include in relevant local strategies. 3 Consider the habitat needs of song thrushes as part of the planning process. 4 Hold regular meetings of the Bird Action Group to progress targets. 	<ol style="list-style-type: none"> 1a Ongoing. 1b Promote the creation of a standard monitoring programme for birds in parks as part of the LBP. 2a Include reference to song thrushes as part of Grassland Strategy devised by 2007. 2b Incorporate in Allotments Strategy; target effort on allotments in 2007. 2c Incorporate in Hedgerow/Verge Strategy by 2007. 3a Ongoing through generic wildlife-friendly landscaping; targeted effort in strongholds. 4a Ongoing.
Song Thrush Species and Land Management	

<p>5 Encourage farmers to manage their land to help song thrushes with the help of grants. (eg. winter stubble, field margins, set aside).</p> <p>6 Encourage gardeners and land managers to restrict the use of pesticides and deter their disturbance of areas likely to have breeding song thrushes.</p> <p>7 Manage Council-owned land sympathetically for existing or potential song thrush populations.</p> <p>8 Devise a targeting strategy for action incorporating Council-owned land and private landholdings and gardens, where song thrushes have been recorded and/or have a stronghold.</p> <p>9 Promote song thrushes in schools and in gardens of school children.</p>	<p>5a Ongoing adhoc and on-site advice and promotion of sympathetic grants such as Environmental Stewardship.</p> <p>5b Promote good practice management via workshops (Link with Farmland HAP).</p> <p>5c Establish 10 key areas for the song thrush by 2009.</p> <p>6a Produce articles in relevant local publications and press; at least two by 2009.</p> <p>6b Promote good practice management via workshops and events (Link with Farmland HAP and Urban Habitats).</p> <p>7a Ensure that account is taken of song thrushes in management plans on Council-owned land</p> <p>7b Update site managers about habitat needs and records (1 update per year).</p> <p>8a Devise strategy by 2007.</p> <p>8b Implement strategy by 2009; establish at least 5 areas focussing on promotion of song thrush and promote effort.</p> <p>9a Target at least one school undertaking song thrush/bird survey work in school grounds and extend awareness and practical action from school grounds into surrounding neighbourhood/homes of pupils.</p>
--	--

Song Thrush Research and monitoring	
<p>10 Establish extent of key breeding and wintering sites from past records and seek additions to records thereafter.</p> <p>11 Encourage the public to report sightings of song thrushes and support the Bromley RSPB in undertaking a borough-wide survey for song thrushes</p> <p>12 Feed local records into regional/national schemes (e.g. Big Garden Birdwatch, Schools Big Garden Birdwatch, RSPB Farmers Alliance project).</p> <p>13 Keep up-to-date with research relating to the song thrush.</p>	<p>10a Establish database and identify strongholds by 2007; ensure ongoing updates of key breeding sites.</p> <p>10b Liaise with regional and national databases to ascertain distribution within the Borough; commence 2006, then ongoing.</p> <p>10c Ensure on-going close co-ordination of records for song thrushes between LBB and RSPB</p> <p>10d Continue monitoring at least 3 farms for song thrush; ongoing.</p> <p>11a During 2006, encourage local RSPB members and recorders to submit records; alongside Borough-wide public promotion coordinated by RSPB/Bird Action Group.</p> <p>11b Promote participation in parks, through 'Friends of..' groups; at least 3 per year.</p> <p>11c Involve at least 6 schools (within song thrush key areas) in recording the song thrush and other birds in their grounds by 2009.</p> <p>11d Support Bromley RSPB in undertaking targeted survey work on 3 further farms under Countryside Stewardship Scheme or Environmental Stewardship by 2009.</p> <p>11e Undertake point count surveys at High Elms Country Park.</p> <p>12a Ongoing</p> <p>13a Ongoing; promote where appropriate.</p>
Song Thrush Awareness & Publicity	
<p>14 Encourage farmers to realise the importance of winter stubble, uncultivated field headlands, grassland, set aside etc. for song thrushes on their landholdings.</p> <p>15 Promote awareness of the conservation requirements of the song thrush.</p>	<p>14a Promote via workshops, relevant publications and Bromley Knowledge.</p> <p>15a Advise on good wildlife gardening for song thrushes at garden centres; at least 2 displays/events by 2009.</p>

<p>16 Promote regional/national schemes at the local level as an opportunity to highlight the species.</p>	<p>15b Continue promotion of Garden Centre wildlife-friendly gardening leaflet.</p> <p>15c Include reference to song thrushes in talks and displays at public events; ongoing.</p> <p>15d Hold at least one walk/event for birds annually, where song thrushes are promoted.</p> <p>16a Via existing publications, website and press releases promote at least 2 by 2009 (e.g. Big Garden Birdwatch, Schools Big Garden Birdwatch, RSPB Farmers Alliance project).</p>
--	--

5 Action by

London Borough of Bromley, London Wildlife Trust, Kent Wildlife Trust, Orpington Field Club, English Nature, Royal Society for the Protection of Birds, British Trust for Ornithology, gardeners, relevant landowners, National Trust.

6 Complementary Plans

There is a UK species action plan for song thrushes. No species action plan for the song thrush exists at present in the London Biodiversity Action Plan, however it is a flagship species for 'Parks, Squares and Amenity Grassland'.

Other related BBAP action plans include: woodland, hedgerows, grassland, farmland.

SKYLARK (*Alauda arvensis*)

“Larks abound here and their songs sound most agreeably on all sides...” (Charles Darwin)

The skylark is widespread in the rural areas of the country but has declined by more than 50% over the last 25 years. Skylarks are most commonly associated with farmland. They are renowned for their beautiful song as they climb vertically into the sky, fluttering their wings. Skylarks are approximately 18cm long, pale brown in colour, with dark streaking above and buff white below and have a slight crest on the head. Skylarks are omnivorous; their diet varies in different crops at different times of year. They feed on a wide range of invertebrates (eg. beetles, ants and grasshoppers), seeds and leaves (eg. nettles, grasses and knotgrass).

Skylarks nest on the ground amongst crops and grass between 20-50cm high. They breed from April to early August, and timing of breeding is dependant on the crop type. on arable land. Laying to fledging lasts a period of 31 days. Insects are an especially important food source for chicks up to a week old.

VISION: To increase the population of skylarks so that you can guarantee to hear its tunes on any walk in Bromley's countryside.

AIMS

- *Identify key sites for skylarks and survey to assess and monitor populations.*
- *Sustain existing breeding and wintering numbers.*
- *To increase populations of skylarks by encouraging good habitat management and the protection of skylark habitat during the breeding season.*

1 Current status

1.1 Distribution

18 London Boroughs, including Bromley, have breeding populations of skylark; at least 6 have wintering populations.

In Bromley, skylarks are mainly found on open farmland and areas of grassland and avoid tall trees and hedges. Skylarks are still found in reasonable numbers around Biggin Hill airport and Jackass Lane areas as well as the farmland in the vicinity of Chelsfield, Pratts Bottom and Cudham.

1.2 Trends

The skylark is declining dramatically on farmland throughout Europe, mainly due to the conversion of lowland grassland to arable and the production of regularly cut silage rather than hay and the increased use of pesticides and fertilisers.

There has been a rapid contractor (>50%) of the UK breeding ranager over the last 25 years. The skylark has been identified by a consortium of ornithological societies, headed by the RSPB, as one of 40 bird species of highest conservation concern in Britain (red list species). The species has unfavourable conservation status in Europe. It is a priority species under the UK BAP. Recreation activities, high intensity grazing and farming operations or land management activities have all played a role in the demise of the skylark. The reduction of winter stubble fields and an increase in autumn-sown crops rather than more suitable foraging habitat and sward height of spring-sown varieties has affected populations. A RSPB survey project undertaken between 1995-1999 on 12 farms in southern England supports this view.

The LBP highlights the skylark as being indicative of the habitats in which it occurs. Also it is culturally valued, has shown past decline and is easily recognised.

2 Current Factors Affecting Species

- (a) Management activities causing disturbance to breeding pairs, damage to nests and exposure of skylarks to predators.
- (b) Application of pesticides which has reduced ephemeral (short-lived) weeds and insect prey.
- (c) Increased extent of autumn-sown cereals and simultaneous reduction in winter foraging habitat.
- (d) Unsuitable nesting habitat of autumn-sown seeds compared with spring-sown varieties
- (e) Dense, tall, fertilised grassland with limited species.
- (f) Dogs off leads
- (g) Increase in arable margins and set aside land.
- (h) Greater awareness and concern of the reduction in skylark numbers by the public.

3 Current Action

3.1 Protection

The skylark is protected under the Wildlife & Countryside Act 1981 (and amendments) and under the European Community Birds Directive. It is an offence to intentionally or recklessly kill, injure or take

any wild bird, or take damage or destroy the nest of any wild bird while that nest is in use or being built, or to take or destroy an egg.

The skylark is protected to a limited extent by designated sites (SINCs and SSSIs); it is most commonly associated with farmland and there is limited control over farming practice. Grant schemes which tie in elements of beneficial to the species are of greatest benefit.

3.2 Management

Local awareness has been raised through the 'Wanted Very Much Alive' survey and through guided walks; information from the survey has helped to confirm the location of key populations in the Borough. Regular monitoring of some areas of the Borough has been undertaken by the local RSPB group. Targeted monitoring of farmland birds on land under DEFRA schemes commenced in 2002 and now covers at least 3 farms at any one time and records are submitted to RSPB/BTO. Greater emphasis will be placed on increasing community involvement in recording skylarks to identify key areas and habitats for this species. At least two walk, promoting skylarks, are undertaken each year.

Set aside, headlands and field margins have helped to provide suitable habitat, which enables at least one brood to be successful. Those farmers who have entered into DEFRA schemes are required to manage and conserve certain elements of the landscape, which is likely to help the skylark. Creation of species-rich grasslands and further establishment of field margins will improve the situation further. No management specifically aimed at conserving the skylark is currently undertaken but skylarks are likely to benefit indirectly as a result of management where wildlife is a prime concern.

4 Proposed Action

Actions	Targets
Skylark Policy	
<ol style="list-style-type: none"> 1 Support the LBP targets which help to encourage skylarks & UK BAP initiatives. 2 Ensure management guidelines for skylarks are included in relevant local strategies. 3 Ensure consideration is given to skylarks as part of the planning process. 4 Hold regular meetings of the Bird Action Group to progress targets 	<p>1a Ongoing.</p> <p>2a Incorporate in the Grasslands Strategy by 2007.</p> <p>3a Ongoing; raise awareness of value and good management to planners through CPD talks on protected species (at least two by 2009) and guidance notes.</p> <p>4a Ongoing, including keeping up to date with changes in agricultural policy (Links with Farmland HAP).</p>

Skylark Species & Land Management	
<p>5 Devise targeting strategy for management, that takes account of key populations and proximity of potential sites.</p> <p>6 Encourage the retention, management and creation of unimproved and semi-improved grassland and uncultivated field margins</p>	<p>5a Devise by 2007.</p> <p>6a Maintain existing Countryside Stewardship Schemes; provide ongoing support and encouragement to those under CSS.</p> <p>6b Ongoing provision of advice to private landowners, including promotion of Environmental Stewardship.</p> <p>6c Target at least 2 skylark strongholds and adjacent areas by 2009, in line with the targeting strategy.</p> <p>6d Promote good management for skylarks via land management workshops (Link with Farmland HAP).</p>
Skylark Research and monitoring	
<p>7 Establish location of key breeding and wintering sites from past and new records.</p> <p>8 Contribute to and keep up-to-date with data and research into skylark</p>	<p>7a Establish database by 2007</p> <p>7b Ensure ongoing updates of database, ensuring close co-ordination of records for skylarks between LBB and RSPB Bromley.</p> <p>7c Continue monitoring on 3 farms; add more where possible.</p> <p>7d Identify keen recorders via RSPB, Friends Groups, Residents Associations and communities on the doorstep of identified sites etc. and provide training where necessary; ongoing.</p> <p>7e Undertake preliminary spring and/or autumn surveys along existing rights of ways, permissive routes and highways, involving local community and recorders, in accordance with strategy by 2007; one by 2009.</p> <p>7f Encourage the public to submit adhoc sightings; ongoing.</p> <p>7g Survey three new 'areas' (guided by strategy) a year.</p> <p>7d Undertake detailed surveys in up to 6 key breeding and wintering sites by 2009.</p> <p>8a Link LBB/RSPB surveys with regional and national schemes</p>

<p>conservation.</p> <p>9 Involve volunteers in surveying for skylarks and other farmland birds.</p>	<p>8b Obtain feedback from regional/national surveys</p> <p>8c Obtain feedback on regional/national research projects; promote and take on board as necessary.</p> <p>9a Maintain and expand existing network of trained/skilled volunteers.</p> <p>9b Organise at least two training days by 2009; 5 new surveyors by 2009</p>
Skylark Awareness & Publicity	
<p>10 Advise and encourage farmers and managers of open areas (eg. golf courses, playing fields, Biggin Hill Airport), especially in key areas.</p> <p>11 Deliver greater public awareness on skylarks and trends in their populations.</p>	<p>10a Promote retention of winter stubble, sympathetic grazing and grass cutting regimes, particularly in their breeding season, via publications of relevant organisations and press articles; at least 4 by 2009.</p> <p>10b Promote via at least two site visits/ workshop by 2009 (Link with Farmland HAP and Urban Habitats HAP).</p> <p>11a Organise at least one events per annum for bird conservation, including reference to the skylark.</p> <p>11b Include skylark on displays presented at public events; at least two by 2009.</p>

5 Action by

London Borough of Bromley, London Wildlife Trust, Kent Wildlife Trust, Orpington Field Club, English Nature, Royal Society for the Protection of Birds, British Trust for Ornithology, relevant landowners, National Trust.

Complementary Plans

There is a UK action plan for skylarks. There is currently no SAP for the skylark under the London Biodiversity Action Plan, but it is a recognised species of grassland, meadows, pasture and farmland under the LBP.

Other related BBAP action plans include: grassland, farmland.

BATS (Chiroptera)

“...Why, it may be asked, has the supposed creative force produced bats and no other mammals on remote islands? On my view this question can easily be answered; for no terrestrial mammal can be transported across a wide space of sea, but bats can fly across...”
(Charles Darwin)

Bats are the only mammals that have evolved powered flight. They are long-lived intelligent animals with a complex social life. Bats are active at night, finding their way around and catching their food using an ultrasonic method of navigation known as echolocation. British bats are insectivorous, taking a huge variety and number of different prey items - thus they are important pest controllers. Bats need safe summer roost sites for rearing their young, good feeding areas with plenty of insect food, and safe undisturbed sites for hibernation in winter. They rely to a greater or lesser extent on trees but some bats prefer to roost in buildings including houses, churches and barns. The complex life style of British bats and their insectivorous diet means that their presence in an area is indicative of a healthy and diverse environment.

VISION: To witness nocturnal flights and secure safe roost from town centres to the wider countryside.

AIMS

- *Maintain, enhance and where possible increase the number of summer roost sites and winter hibernation sites.*
- *Maintain, enhance and extend suitable habitat for foraging bats.*
- *Improve and increase the network of linear landscape in order to link roost with foraging areas and to link islands of suitable habitat.*
- *Raise awareness of bats and their needs with the general public, particularly householders.*

1 Current status

1.1 Distribution

12 of the sixteen species of British Bat occur in London, at least 8 are known to be breeding in Greater London. 10 species occur in Bromley, but only the Pipistrelle can be considered relatively common.

Daubenton's bat (*Myotis daubentonii*).

The London Biodiversity Action Plan highlights that this species is of conservation concern and culturally valued. They are known to be present in 16 London Boroughs; 3 of which have known roost sites. During the summer in Bromley, this bat can be found feeding over large water bodies (Crystal Palace Park, Kelsey Park, Keston Ponds). Summer roosts, which are usually in trees but may be in built structures such as bridges, walls etc. have not been identified in the borough. It is regularly found in small numbers in underground sites in winter.

Whiskered and Brandt's bats (*Myotis mystacinus* and *M. brandtii*). It is extremely difficult to distinguish between these bats. Summer roosts are mainly in buildings and possibly in trees but there are no known sites in Bromley. They are known from winter hibernation sites in the Borough but no attempt at separating the species has been made.

Natterer's bat (*Myotis nattereri*). Summer roost sites include barns, churches and other structures with old beams, and also holes in trees. No summer roost sites are known in the Borough. They regularly occur hibernating in underground sites in Bromley in the winter. One dead bat was found near High Elms Nature Centre in January 1997.

Pipistrelle bat (*Pipistrellus pipistrellus* and *P. pygmaeus*). The smallest bat in Britain. The UK BAP highlights the dramatic decline of the population (70%, 1978-1993). Pipistrelles are Britain's commonest bats, however, and are also the most widespread and urban of the bats. The Pipistrelle is found in all London Boroughs; Bromley is the only Borough where roost sites have been located. The London Biodiversity Action Plan highlights that it is a culturally valued species and that it is a priority species under the UK BAP. Summer roosts are often in houses (under ridge tiles or behind hanging tiles for example) and are the best known because of the legal requirement to consult English Nature if works affecting a bat roost are to be carried out. There are several known roosts in buildings in Bromley. Pipistrelles also use holes in trees and may roost behind ivy. They are rarely encountered in underground sites in winter, preferring buildings and trees for hibernation. Both species of Pipistrelle (they have different echolocation frequencies, 45 kHz (*P. pipistrellus*) and 55 kHz (*P. pygmaeus*)) are present in Bromley and preliminary results suggest that *P. pipistrellus* is the more common species.

Serotine bat (*Eptesicus serotinus*). One of the largest British bats and one that is very dependent on buildings for summer roost sites and winter hibernation sites. Its preferred food is large beetles particularly chafers and therefore it favours unimproved or semi-improved pastures as feeding sites. It is confined to the southern part of England but populations in the south-east appear to be declining with numbers of roosts decreasing and numbers of individuals in many of the remaining roosts being in single figures only. The Species is of Conservation Concern under the UK BAP. It is rare in London, present in 9 London Boroughs; roost sites have only been confirmed in Bromley. There are very few known summer roost sites in Bromley and these occur in the outer urban area adjacent to open countryside. Occasional sightings suggest the presence of a colony in the Bromley Common area.

Brown long-eared bat (*Plecotus auritus*). A widespread species which is difficult to monitor because of its very quiet echolocation signals. Summer roosts are found in buildings (including churches) and trees. It is a Species of Conservation Concern under the UK BAP, and is rare in London and culturally valued (LBP). Its presence has been confirmed in 17 of the London Boroughs; 6 of which have roost sites. In Bromley several roosts are known to occur in older properties with large roof spaces usually adjacent to wooded countryside where the bat feeds within the canopy of the trees. In winter they are regularly encountered in underground sites in Bromley and also occasionally in roof spaces.

Noctule bat (*Nyctalus noctula*). The London Biodiversity Action Plan highlights that it is a Species of Conservation Concern under the UK BAP and has been in decline. One of the largest British bats, it

is almost totally dependent on trees for summer roost sites and winter hibernation sites. The Noctule is a strong flying bat, which emerges early from its roost site to feed over pasture and along woodland edges on beetles and large moths. It is present in 23 London Boroughs, 6 of which have confirmed roost sites. Only one summer roost site has been identified in Bromley and it occurs in small numbers in several areas. Considering its habits and ease of identification by bat detector the few Bromley records seem surprising.

Leisler's bat (*Nyctalus leisleri*). A smaller version of the Noctule, this is a scarce and poorly known species. Other than Ireland where it is common and widespread, this bat seems to be restricted to central and SE England. Summer roosts have been found in buildings and trees but the status of roost in north-west Kent may have been affected by the disturbance of habitat for the Cross-Channel Rail Link development. Two records of single bats in houses in late summer in the Bromley area have recently been augmented by the finding of a mating roost in Kelsey Park.

1.2 Trends

In the UK little is known of the current status of most species but all available evidence suggests an overall decline in populations. Two British species are on the threatened list, most are rare or vulnerable and only four are considered not threatened. Even the common and widespread Pipistrelle is thought to have declined by about 70% between 1978 and 1993 (National Bat Colony Survey). The position has been complicated by the recent recognition of two distinct species within the previously known *P. pipistrellus*, that is *P. pipistrellus* and *P. pygmaeus*; for the purposes of this action plan the two species are not separated and will be collectively referred to as Pipistrelle. There is some evidence to suggest that the Daubenton's bat may be increasing due to low level pollution of watercourses, where it can take advantage of the increased populations of Chironomids (midge larvae).

Inappropriate building works, bridge strengthening, and the use of toxic timber treatment chemicals have had an impact on bats in summer roosts. Many householders are proud of their roosts, whilst others are, often unnecessarily, wary of consequences in divulging such information, particularly if house improvements are sought. Loss of old trees, climbing plants such as ivy and the inappropriate management practices relating to woodland and wayside trees will also have had an effect on roost and reliant populations. Winter hibernation sites, including buildings, trees and underground sites such as dene holes, chalk mines and ice houses are not always managed with bats in mind and in the latter case are often automatically filled-in on safety grounds.

Changes in farming practice have reduced the amount of insect prey available for foraging bats. Loss of permanent pasture, increase in horsiculture at the expense of other grazing animals, and inappropriate management of grassland, watercourses and water bodies have led to a decline in insects. The loss of hedgerows not only reduces habitat but also removes features which may be essential for bats commuting between roost sites and feeding areas.

It is anticipated that possible milder, wetter winters would have an impact on the species. Bats use up more energy during hibernation and would be forced to feed at a time when there are fewer insects around and wet weather conditions make it less favourable to fly.

Misconceptions about bats still remain as a result of long-standing myths. Wider knowledge of the protected status of bats has, on the whole, helped to conserve the species, including as part of the planning process. There is a rising trend, however, in using bats as an excuse to object to planning applications without real basis.

It is recognised that there is need to spread awareness of bat requirements through targeted approaches. Workshop for building surveyors and planners and leaflets tree surgeons have previously been organised in Bromley as part of previous BBAPs.

2 Current Factors Affecting Species

- (a) Ignorance or intolerance of the public to bats, including roost owners.
- (b) Loss, damage and disturbance of summer roost sites.
- (c) The influence of cat kills on bat populations particularly in suburban areas.
- (d) Loss of feeding areas.
- (e) Loss of navigation landmarks/commuting routes such as hedgerows and other linear features such as tree lines.
- (f) Loss or disturbance of winter hibernation sites.
- (g) Potential effects of climate change.
- (h) Increasing awareness of bats and their protective status.
- (i) Increasing awareness of wildlife gardening for bats, including the erection of bat boxes.

3 Current Action

3.1 Protection

All bats and their roosts are protected by Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and also under Annex IV of the EU Habitats and Species Directive. It is an offence to intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection and for any person to intentionally kill, injure or take any wild bat.

3.2 Management

English Nature advises on the conservation and management of known roosts through the Wildlife and Countryside Act 1981. DEFRA deal with licences relating to approved planning applications. The Bat Conservation Trust was commissioned by the Department of the Environment to undertake a National Bat Monitoring Programme to gain the knowledge necessary to advise on the management for bat species.

Members of the London and Kent Bat Groups monitor some summer roost sites and are engaged in surveys to ascertain good feeding areas for bats. Three winter hibernation sites are monitored. There are plans to repeat the survey of churches last undertaken in 1988 from 2005/6. Several people hold licences to examine bat boxes and survey roosts in the Borough.

More than 5 walks, talks or events promote bats each year for the general public and targeted groups, to increase awareness of bats. Bat box schemes are now established in Crystal Palace

Park, Kelsey Park and Jubilee Country Park. Sponsored bat boxes have been obtained by Friends of Poverest. Since 2004, bat monitoring has taken place at High Elms Country Park as part of the National Bat Monitoring Scheme and includes sunrise surveys. Advice notes were distributed to vets in 2005.

Management of Bromley's woodlands, hedgerows, grasslands, wetlands and urban habitats will all affect the status of bats in the Borough. Relevant habitat action plans must consider bats and consultation take place with the Bat Action Group where appropriate. Representative of the Bat Action Group will attend meetings of the LBP Bat Working Group from 2005.

4 Proposed Specific Action

Actions	Targets
Bats Policy	
<ol style="list-style-type: none"> 1 Support the London Biodiversity Partnership in implementing action for bats, including targets of the UK BAP. 2 Ensure that the needs of bats are considered in local strategies affecting habitats used by bats . 3 Ensure the needs of bats are taken into account in the planning. 4 Continue to raise awareness amongst relevant Council Departments of bats and the legal implications. 5 Hold regular meetings of the Bat Action Group. 	<p>1a Ongoing; attend LBP Bat Working Group meetings.</p> <p>2a Ongoing (eg. Local Environment Agency Plans; hedgerow/verge strategy.</p> <p>3a Ongoing; continue to develop links with English Nature and DEFRA; monitor planning applications affecting bats.</p> <p>4a Promote local guidelines and other relevant publications (Bat Conservation Trust, LBP); hold at least two CPD talks within Council by 2009.</p> <p>5a Ongoing</p>
Bats Species and Land Management	
<ol style="list-style-type: none"> 6 Ensure the needs of bats are considered in the management of sites owned by Bromley Council, including parks, farms (Council-owned and private) and other private landholdings. 	<p>6a Ongoing; include management advice specifically for bats in all management plans for Council-owned parks.</p> <p>6b Identify possible sites where improvement in commuting routes could enhance bats' ability to use important habitats, focussing on permanent pasture and sites adjacent to Council-owned land; target two areas by 2009. (Link to Hedgerow SAP and target proposed World Heritage Site).</p> <p>6c Promote bats, encourage good management of feeding sites, commuting routes and land adjacent to known roosts and encourage retention of permanent pasture to Council-owned farmers and</p>

Actions	Targets
Bats Policy	
<p>7 Ensure and further encourage hibernation sites, maternity roost sites and 'occasionally-used' roost sites for bats.</p>	<p>other local farmers through land management workshops, articles and web-based information by 2008. (Link with Farmland HAP).</p> <p>6c Promote Environmental Stewardship; ongoing.</p> <p>6e Contact owners/ managers of sites adjacent to roosts by 2008, especially where land includes permanent pasture</p> <p>7a Maintain and improve existing underground sites used by bats by monitoring state of the sites annually and taking action as necessary (eg. maintain grilles).</p> <p>7b Continue to identify new potential bat hibernation sites; target Sundridge Park and Kelsey Park by end of 2006.</p> <p>7c Continue to identify new 'occasionally-used' and maternity roosting opportunities with priority in areas which are linked to key habitats and other roost sites in the landscape; implement creation on 3 sites by 2009, incorporating more adventurous opportunities such as drilling hole in /fixing deadwood to trees and opportunities in bridges over water. (Link to Woodland and Wetland HAPs).</p>
Bats Research and Monitoring	
<p>8 Consolidate and keep all relevant information up-t-date on computer database.</p> <p>9 Train and provide support for potential bat surveyors.</p>	<p>8a Maintain records on computerised database with particular focus on bat roosts and important foraging areas, aswell as planning applications affecting bats; ongoing.</p> <p>8b Ensure two-way exchange of information with London and Kent databases; ongoing.</p> <p>9a Organise training days in surveying techniques and in the use of bat detectors; at least one by 2009.</p> <p>9b Encourage surveyors to take on more responsibility by becoming licensed surveyors to enable inspection of bats and their roost sites, including bat box schemes; ongoing.</p>

Actions	Targets
Bats Policy	
<p>10 Survey appropriate areas for the presence of bats, summer roosts in trees and good foraging areas.</p> <p>11 Continue monitoring of known hibernation sites.</p> <p>12 Resurvey medieval churches for use by bats.</p> <p>13 Encourage wider participation in bat box schemes.</p> <p>14 Keep up-to-date with research on bats (eg. commissioned survey on artificial lights and bat ecology) and support research efforts</p>	<p>9c Consider organising a training day for new licensed surveyors and implement, if appropriate, by 2009.</p> <p>10a Continue High Elms survey; ongoing.</p> <p>10b. Identify possible tight target sites/areas for surveying (eg. horse paddocks, wards, Cudham Valley, noctule areas, Crofton Heath to investigate Leisler's) by early 2006.</p> <p>10c Instigate a programme of surveying; 2 targets sites/areas by 2009.</p> <p>11a Ongoing; produce</p> <p>12a Complete survey by 2007.</p> <p>13a Erect and monitor boxes in River Cray/Riverside gardens, Beck Corridor (SUN Project) and youth group camp site by 2009.</p> <p>13b Support ongoing schemes in Kelsey Park, Crystal Palace Park and Jubilee Country Park.</p> <p>13c Encourage through Greening Bromley's Gardens; residents to provide observation records (Link with 'Urban Habitats').</p> <p>determine if this and other SAPs are being</p> <p>14a Ongoing; maintain good communications with LBP Working Group, English Nature and Bat Conservation Trust.</p> <p>14b Promote/disseminate as appropriate.</p>
Bats Awareness & Publicity	
<p>15 Encourage the general public to make their gardens more attractive to bats.</p>	<p>15a Continue to promote via the Greening Bromley's Gardens (eg. planting night-scented flowers and digging a pond); provide information via Bromley Knowledge.</p> <p>15b Promote bats through publications and press releases; at least 2 by 2009.</p> <p>15c Incorporate bats in displays at local garden centres and shows/events; at least 2 by 2009.</p> <p>15d Promote the idea of bat-friendly gardens through garden centres via</p>

Actions	Targets
Bats Policy	
<p>16 Maintain programme of talks and walks to increase public's awareness of bats and their needs.</p> <p>17 Promote the conservation of bats with builders, roofing contractors, and timber treatment firms.</p> <p>18 Ensure that the value of trees for bats and their insect prey is widely understood and promote good practice amongst professionals.</p> <p>19 Encourage acceptance and understanding of existing roosts amongst householders and other owners and those responsible for the upkeep of buildings used by, or with potential for, bats (including barns, old farm buildings, churches).</p> <p>20 Raise public awareness of devastation that can be caused to bat populations by cat kills particularly at roost sites.</p> <p>21 Give advice to veterinary surgeons on care of injured bats</p>	<p>Garden Centre leaflet.</p> <p>15e Target one neighbourhood to encourage bat-friendly gardening by 2009.</p> <p>16a Organise at least 2 a year.</p> <p>16b Give talk and walks to specific groups; ongoing.</p> <p>16c Consider organising a special, high-profile event incorporating novel approaches to raising awareness about bats (1 by 2009).</p> <p>17a Provide information via Bromley Knowledge.</p> <p>17b Contact all building firms etc. on the Council's Contractor List to promote website information by 2007.</p> <p>18a Maintain knowledge of Council Officers responsible for or affecting tree and woodland management or affecting trees and potential bat roosts; ongoing, refreshing awareness annually.</p> <p>18b Provide information to all tree surgeons, foresters and contractors dealing with trees and potential bat roosts by 2008; provide and promote information via Bromley Knowledge.</p> <p>18c Consider the organisation of a workshop, implementing if possible by 2009.</p> <p>18d Organise talk for Tree Wardens; one by 2007.</p> <p>19a Ongoing as new roosts identified; also encouraging householders with roosts to participate the National Bat Monitoring Programme.</p> <p>19c Promote via Bromley Knowledge.</p> <p>20a Make BCT's leaflet on cat problems available on Bromley Knowledge; promote to vets and press by 2007.</p> <p>21a Ongoing promotion, following circulation of leaflets to vets; via web.</p>

5 Action by

Householders, farm and land managers, tree and building contractors, London Borough of Bromley, English Nature, Department of Farming and Rural Affairs (DEFRA), local members of the Kent and London Bat Groups, Kent Underground Research Group, Orpington Field Club, 'Friends of' groups (e.g. Friends of Hayes Common, Friends of Kelsey Park), conservation volunteer groups (eg. Well Wood Conservation Volunteers), Chislehurst & St. Paul's Cray Conservators, London Biodiversity Partnership.

6 Complementary Plans

As a key species, the Pipistrelle bat has an action plan under the UK Plan. Bats are a Species Action Plan under the LBP. Bats also feature as flagship species under the Woodland Habitat Action Plan of the London Biodiversity Action Plan.

Other related BBAP action plans include: ancient trees, woodland, hedgerows, grassland, lowland heath and mire, wetland, urban habitats, farmland.

HEDGEHOG (*Erinaceus europaeus*)

A hedgehog is a characteristic mammal of suburban gardens, woodland edges, hedgerows and similar habitats. Its strange appearance has inspired many myths and ensured its popularity in modern times. The hedgehog has suffered from the impact of pesticides upon its prey - molluscs, worms, beetles, and other invertebrates - and loss and fragmentation of preferred areas. It is still common, however, throughout mainland Britain. Research suggests that the population density of hedgehogs is between 3-7 per hectare, and that an average individual's range is 20 hectares.

VISION: A popular visitor to back gardens, we must encourage gardeners to adopt a hedgehog-friendly approach.

AIMS

- *Determine the distribution and status of hedgehogs in the Borough and monitor key areas.*
- *Maintain and enhance the strongest populations of hedgehogs through appropriate habitat management.*
- *Raise awareness of the species and provide management advice.*

1 Current status

1.1 Distribution

In London, the hedgehog is common and widespread in the urban fringe, including Bromley, but becomes rarer towards the highly urbanised centre and absent from Central London. They have been recorded in 23 of the London Boroughs (LBP 2000). No detailed information of populations is known for Bromley. The public as part of the 'Wanted Very Much Alive' survey provided some records. The local representative of the Hedgehog Preservation Society, who cares for sick and injured hedgehogs in the area, has a good idea of hedgehog occurrence in the Borough. This information is very useful but consideration should be given to the fact that these individuals are possibly indicating sub-optimal areas for hedgehogs rather than their true distribution.

Being nocturnal, most sightings are made by garden owners, or by people using roads and pavements after dark. Unfortunately, their presence is often noted when they are run over on the road. It is a misconception to think that hedgehogs are mainly found in gardens. It's relatively large home range means that sightings are more likely to be made in areas where there are more people. Random surveys in countryside areas are therefore unlikely to be fruitful without significant effort.

1.2 Trends

Anecdotal evidence from individuals on how the species is not seen as commonly as it used to be, demonstrates the extent of concern and admiration for this mammal. The high frequency of occurrence of hedgehogs in poor condition is also a worrying sign.

The species is one of conservation concern under the UK BAP. The hedgehog has favourable conservation status in Europe; possibly as much as a quarter of the world population occurs in the UK. It is thought that the hedgehog has declined in numbers and range in Britain by up to 24% in the last 25 years.

An overall increase in the use of pesticides in both urban and rural settings since WWII is likely to have had a significant impact. The species is likely to be less common in areas of intensively-managed agricultural land. The popularity of hard-landscaping and horticultural practice has provided less suitable habitat for nesting and foraging. Development and road-building has fragmented habitat so that dispersal of the species is difficult; where a population is absent, the area is unlikely to become colonised again naturally. Populations that are already small and non-viable, are likely to become extinct in local areas in the future.

General wildlife management objectives are likely to be benefiting the species. The increased availability of 'hedgehog hibernation boxes' at garden centres is an encouraging sign that the public are keen to help hedgehogs. The increasing desire to 'want a hedgehog' in the garden has led to frustration, however, when good practices lead to no sightings and compound the 'need' to use slug pellets, for example. It is only through efforts of whole neighbourhoods, where hedgehogs still hold on, that successful breeding and pest control will occur. Alternative slug control methods are being promoted much more within garden centres.

2 Current Factors Affecting Species

- Decline and loss of suitable habitat, also leading to the fragmentation of populations
- Unappealing sites for nesting and foraging and insensitive habitat management (eg. tidiness of gardens and parks).
- General-use application of slug pellets and pesticides
- Increasing road traffic.
- Poor or unexpected changes in weather conditions & future climate change.
- Presence of dogs.
- Feeding of hedgehogs in gardens.
- Increase of composting in artificial containers.
- Increasing popularity of wildlife-friendly gardening.
- Lack of or disturbance of hibernation sites.
- Direct hazards or barriers to dispersal (eg. bonfires, steep-sided ponds, rubbish including tins and loose netting, high walls and fences).

3 Current action

3.1 Protection

The hedgehog is protected under Schedule 6 of the Wildlife & Countryside Act 1981 (as amended by the Wildlife & Countryside Act 2000) whereby it is an offence to kill or take hedgehogs by certain methods. Hedgehogs are also protected under the Wild Mammals (Protection) Act 1996, which addresses wanton persecution.

3.2 Management

Organisations such as the Mammal Society provide advice and leaflets on hedgehog conservation. Locally, the hedgehog profile has been raised through the 'Wanted Very Much Alive Survey' (1999-2000) and the long-standing publicity of the Hedgehog Preservation Society through talks and events. Buzz events and the 'Greening Bromley's Gardens' campaign has highlighted hedgehogs through talks and the provision of reference file with leaflets.

The extent of current management specifically for hedgehogs is not known but is most likely to be undertaken by garden owners. The leaving of 'habitat piles' in recently managed woodlands is normal practice on Council-owned and privately-owned sites managed by the Countryside Management Service, for species such as the hedgehog.

During the period of the 3rd Edition BBAP, it is the intention to direct more positive effort will be made towards recording and helping this species.

4 Proposed Action

Actions	Targets
Hedgehog Policy	
<p>1 Support action for hedgehogs under the LBP Plan.</p> <p>2 Promote hedgehog-friendly planting as part of planning applications in stronghold areas.</p> <p>3 Ensure action for hedgehogs is undertaken through Urban Habitats Action Group and Recording Group.</p>	<p>1a Ongoing</p> <p>2b Ongoing and through guidance.</p> <p>3b Ongoing.</p>
Hedgehog Species & Land management	
<p>3 Provide advice to householders in stronghold areas, also ensuring that green corridors are created and maintained.</p> <p>4 Promote hedgehog boxes and natural nesting sites/cover and encourage garden centres to promote boxes.</p> <p>5 Promote hedgehog-friendly landscaping on Council Owned open spaces.</p>	<p>3a Identify and target 3 neighbourhoods where hedgehogs are a stronghold by 2009; promoting effort door-to-door and via community groups.</p> <p>3b Promote existing leaflets available and produce simple local guidance leaflet via Bromley Knowledge and target neighbourhoods. and target three strongholds (areas to be defined) by 2009.</p> <p>4a Encourage garden centres to stock and effectively market via Garden Centre leaflet by 2007.</p> <p>4b Provide guidance on creating hedgehog boxes on Bromley Knowledge by 2007.</p> <p>4c Promote as part of programme of events focussing on building for wildlife; two held by 2009.</p> <p>5a Ensure all open spaces in hedgehog stronghold areas provide some cover by 2009; incorporate within management plans.</p>
Hedgehog Research & Monitoring	
<p>6 Record and update hedgehog sightings on database and identify key sites and areas (strongholds).</p>	<p>6a Collate available records on database (eg. past records, adhoc sightings, hedgehog Preservation Society, Mammal Society, regional and national databases) relevant to the Borough by 2007</p> <p>6b Establish distribution with the Borough and identify strongholds from available</p>

Actions	Targets
Hedgehog Policy	
<p>7 Promote public survey effort. via website.</p> <p>8 Feed data into regional and national databases and surveys.</p> <p>9 Seek update to date information and research from The Mammal Society and other relevant organisations.</p> <p>10 Ensure the availability of Hedgehog books in all libraries.</p>	<p>records by 2007.</p> <p>6b Maintain database; ongoing.</p> <p>7a Continue to encourage submission of sightings via Bromley Knowledge.</p> <p>7b Choose at least two target areas for 'neighbourhood watches and effort' based on stronghold areas, and promote recording and positive effort there.</p> <p>7c Promote high-profile, Borough-wide survey during one spring/summer for hedgehogs following database, website and neighbourhood effort by 2009; (combine with programme of events).</p> <p>8a Ongoing following establishment of database.</p> <p>9a Ongoing by the Recording Group.</p> <p>10a By 2007.</p>
Hedgehogs Awareness & Publicity	
<p>11 Promote hedgehogs and highlight threats and requirements, (eg. encourage gardeners to use hedgehog friendly pest control, educate householders to ensure appropriate feeding of hedgehogs; highlight the impact of bonfires on hibernating hedgehogs).</p> <p>12 Promote the design of ponds that allow hedgehogs to escape.</p>	<p>11a Provide a concentrated programme of hedgehog-focussed talks and events in year to be determined (to coincide with survey year).</p> <p>11b Provide information to allotment holders, gardeners and landowners through the Green Gardening Reference File and web-based information, green gardening leaflet.</p> <p>11c Include at least two articles in Council newsletters and newspapers by 2009; highlighting examples of good practice and achievements.</p> <p>12a Ensure reference in relevant written advice or pond creation, management talks and events organised through Wetland HAP.</p>

5 Action by

Hedgehog Preservation Society, London Mammal Group, London Borough of Bromley, English Nature, Kent Wildlife Trust, London Wildlife Trust, Orpington Field Club, horticultural and allotment societies, other principal landowners (e.g. golf clubs), residents with gardens.

6 Complementary Plans

No equivalent species action plan currently exists under the UK or London Plans. However, the LBP lists the hedgehog as the flagship species under 'Parks, Squares & Amenity Grassland' and 'Private Gardens' habitat action plans; it is also acknowledged as a consideration under other habitat action plans though not specified (eg. woodland, scrub, churchyards).

Other related BBAP action plans include: woodland, hedgerows, grassland, urban habitats.

ANCIENT TREES

“I examined flowers from six different trees at Holwood & in all it was clear that (many) male flowers (considerably) open before females and so lose their pollen uselessly.” (Charles Darwin).

Ancient trees are important as part of our cultural and historical landscape and are valuable for a wide variety of wildlife. A tree may be considered to be ancient when it is in the last third of its life. An ancient tree can also continue for many years in a moribund or dead state, serving as the host to a number of rare organisms. They are important for many organisms that inhabit dead wood, such as beetles, spiders and other invertebrates. Small mammals, bats and birds often use the holes and slits in trunks and boughs for nesting and roosting. These trees are also important for: lichens, where air is reasonably clear; climbing plants, such as ivy and honeysuckle; fungi, which themselves may host a number of associated invertebrates including beetles and flies. The greatest threat to the future of ancient trees is misunderstanding, resulting in the cutting down of ‘non-perfect’ trees.

VISION: Markers of time and place, ancient trees must be conserved for our next generation.

AIMS

- *Promote the value of ancient trees.*
- *Build up knowledge about the Borough’s ancient trees and their associated species.*
- *Encourage the retention and protection of ancient trees and their woody debris.*
- *Create a resource of ancient trees for the future.*

1 Current status

1.1 Distribution

Britain is considered to have more ancient trees than most of the rest of Europe because the practice of pollarding trees and the establishment of deer parks is less common elsewhere. Ancient trees can be found almost anywhere, in parkland, pasture woodland, old hedgerows, wooded commons, ancient woodland, as marker trees for parish boundaries, along roads and trackways, in gardens and churchyards. A number of trees are of great age because they had been regularly pollarded.

Ancient trees are widely distributed across Bromley. They are found in woodlands, hedgerows, churchyards, parks, commons, along roads and footpaths as well as in gardens. Being the largest Borough with a large proportion of countryside, Bromley has a large number of ancient trees, though not necessarily in the equivalent densities as other London Boroughs. Comprehensive records of the locations of these trees are not yet available, highlighting the need for further survey work. Orpington and the countryside near Chelsfield have some impressive walnut trees, for example in Cockmannings Lane. There is a line of old limes behind Orpington High Street and there are large sweet chestnuts in gardens in Knoll Rise.

1.2 Trends

It is amazing to think that in some places as little as 3 generations of trees, would link up to the first tree colonists at the end of the Ice Age. People often greatly value ancient trees as landmarks and a

characteristic part of the local landscape. They are direct connections to older landscapes and have survived as mementos. The remnants of the Wilberforce Oak' on the Keston Ridge is a classic example of the cultural importance of ancient trees. The large size of ancient trees and the frequently strange, contorted shapes into which they grow, fascinates people. It is in these ways, rather than their direct value for wildlife, that they have been most appreciated. Awareness of the importance of ancient trees for wildlife has become more widely recognised through high-profile sites such as Richmond Park and Windsor Great Park and national campaigns.

Ancient trees and the communities they support can obviously not be replaced easily or quickly. A combination of ancient tree conservation and encouraging the growth of the next generation of ancient trees is vital.

A long-lived tree, such as oak, can provide a breeding site for particular insect species for a century or more (JNCC, 2001). Greater effort has been placed in recent times into assessing the importance of wildlife value of ancient trees. Difficulty arises in that many of the species that benefit from the presence of older trees are obscure and difficult to identify; many of the species do not appeal to most and surveyors are difficult to source.

Ancient trees are often removed as being dangerous or unsightly. The passion for tidiness often speeds the removal of old trees, dead limbs and dead 'fall-out' from ancient trees. Health & Safety Regulations and increased concern over owner's responsibilities has led to ancient trees being targeted for removal. The production of publications (eg. 'The Recognition of Hazardous Trees, 1990, Forestry Commission) relating to the assessment of hazardous trees has been a responsible approach to take, but has also helped to form bias against features that in fact contribute to the biodiversity of a tree. In recent years, English Nature, conservation organisations, Forestry Authority, and local authorities, including the Corporation of London, have led the way in seeking a balanced approach to ancient tree management. Hazardous limbs rather than whole trees by footpaths have been removed, for example. More effort is being placed into uncovering the success of different management approaches and monitoring their associated species. The Veteran Trees Initiative - a national partnership between English Nature, National Trust, English Heritage, Countryside Commission, The Forestry Authority, The Ancient Tree Forum and The Corporation of London – aims to promote the conservation of veteran (or ancient) trees wherever they occur to ensure their future continuity. The Bromley Oak, beside the Pavilion Leisure Centre, was highlighted as one of the 'Great Trees of London' in 1997. A leaflet was produced by the London Tree Forum to encourage the public to help find and watch-out for these trees.

2 Current Factors Affecting Species

- (a) Removal of trees as unsightly or dangerous.
- (b) Concreting around and covering lower parts of trunks can kill trees.
- (c) Cutting roots when work is undertaken close to the tree
- (d) Loss through development
- (e) Neglect and inappropriate management
- (f) Lack of future-generation trees due to grazing, cutting and intensive landscaping
- (g) Removing deadwood which naturally collects around ancient trees.

3 Current Action

3.1 Protection

Some ancient trees have Tree Preservation Orders. The main purpose of TPOs is to protect trees of high amenity value. This designation enables some ancient trees that are also important for wildlife, to enjoy protection, with sympathetic management. Individual trees are protected as important parts of woodland or area TPOs too.

3.2 Management

Since 1999, some effort has been placed into revealing the presence of many ancient trees within the Borough (eg. Wanted Very Much Alive survey forms). Over 50 ancient trees have been mapped, however more information will be sought during the 3rd Edition BBAP. Tree wardens and Friends of groups will be encouraged to participate.

Where possible, conservation of ancient trees and standing dead wood has been ensured as part of management plans on Council-owned woodlands through sympathetic management and in privately owned woodlands with which the CMS has been involved. Encouraging maiden trees has also been important.

Ancient & Veteran Trees were promoted a talk at Scadbury Park during 2005. Management of ancient trees was also undertaken as part of the 'Taste of the Wild' weekend at Scadbury Park.

4 Proposed Specific Action

Actions	Targets
Ancient Trees Policy	
1 Promote the Bromley Woodland (Indicative Forestry Strategy) and relevant updates.	1a Ongoing; promote also via Bromley Knowledge. (Link to Woodlands HAP)
2 Protect ancient trees by means of Tree Preservation Orders where appropriate.	2a Ongoing
3 Support, ensure involvement with and help implement London-based projects and national initiatives.	3a Ongoing, attend London Tree Officer's Forum; attend LBP Woodland Action Group.
4 Consider the needs of ancient trees as part of the planning process and endeavour to gather ecological information about them.	4a Ongoing
5 Attend meetings of the Ancient Tree Forum.	5a Ongoing

Ancient Trees Species & Land Management	
<p>6 Encourage retention and good management of ancient trees within woodland management plans</p> <p>7 Pollard young trees to create a resource of ancient tree pollards for the future within reasonable distance of ancient trees.</p> <p>8 Leave fallen or standing dead wood in situ as long as possible; include in management plans.</p>	<p>6a Include management for ancient trees in all Council-owned woods by 2009; target Scadbury Park.</p> <p>6b Adopt findings of research and practices promoted in such publications as 'Habitat Management for Invertebrates' (JNCC, 2001)</p> <p>6c Promote good practice management advice through Bromley Knowledge and promoting wildlife value in balance with risk assessment.</p> <p>6d Consider trialing the re-pollarding of ancient trees; two trees on privately-owned woodland by 2009.</p> <p>7a Identify (determine 'partner' trees) and pollard two suitable small areas per year; label and map to prevent accidental felling and monitor success every 3 years ; commence in Scadbury Park, High Elms Country Park and Sparrows Wood from 2006.</p> <p>8a Ongoing; balance alongside risk assessments.</p>
Ancient Trees Research & Monitoring	
<p>9 Identify the location of individual or congregations of ancient trees in the Borough and maintain records.</p> <p>10 Undertake survey of species associated with ancient trees (living in or on them).</p>	<p>9a Add further records to computerised database/map of 'Ancient Trees' and incorporate surveys undertaken by professional (eg. planning applications); ongoing.</p> <p>9b Promote information about and details on recording of ancient trees by the public via Bromley Knowledge.</p> <p>9c Devise detailed survey form (include photos, dimensions, state of decay, etc.), with a view to having surveys repeated in future.</p> <p>9d Train surveyors to gather this detailed information; target Tree Wardens.</p> <p>9e Undertake detailed recording as part of Council tree surveys; ongoing as allows.</p> <p>9f Crofton Wood (and other parks and open spaces); WHS; youth group sites.</p> <p>10a Baseline computer-based information by 2005; co-ordinate invertebrate and/or</p>

<p>11 Keep up to date with regional and national research on ancient trees and learn from the experience of other land managers.</p>	<p>fungi/lichen/moss survey, bats, birds on selected (possibly 20) trees by 2009; target Scadbury Park. 11a Ongoing; promote as appropriate.</p>
<p>Ancient Trees Awareness & Publicity</p>	
<p>12 Offer land managers and residents advice and promote the value of ancient trees and the species they support.</p> <p>13 Incorporate ancient trees as part of established/promoted walks and trails.</p>	<p>12a Ongoing (ad hoc and on site). 12b Provide information and existing guidance via Bromley Knowledge, including articles published by organisations such as Wildlife Trust and Arboricultural Association. 12c Promote ancient trees in local publications, newsletters and the press (eg. OFC, RSPB); 2 articles by 2009. 12d 2 tree-specific events by 2009 (Link in with Woodland HAP) as part of regional/national campaigns where appropriate. 13a Ongoing; in Council nature trails, self-guided circular walks, guided walks, woodland events etc. 13b Ongoing; as part of strategic walks. 13c Nature Trails on private landholdings where there is potential for promotion to site users (eg. campsites, establishments, housing developments).</p>

5 Action by

London Borough of Bromley, London Wildlife Trust, Kent Wildlife Trust, Orpington Field Club, arboricultural organisations and contractors, private landowners, Woodland Trust, National Trust., London Biodiversity Partnership.

6 Complementary Plans

No equivalent species action plan exists under the UK Plan. Ancient trees are currently included under the Woodland Habitat Action Plan of the London Biodiversity Action Plan.

Other related BBAP action plans include: stag beetles, bats, butterflies, woodland, hedgerows, urban habitats.

DORMOUSE (*Muscardinus avellanarius*)

The 'common' or 'hazel dormouse is one of our most attractive small mammals and is familiar to most of us as a sleepy character in 'Alice In Wonderland'. The species has declined by 50% during the past 100 years due to loss and fragmentation of habitat. They are mainly associated with woodlands and hedgerows.

Dormice are nocturnal and live at low densities, requiring 20ha of suitable woodland habitat, such as hazel coppice, to support a viable population. They build a nest of shredded honeysuckle bark and leaves in hollow trees, bramble or coppice stools. They are highly adapted to searching for food at the tips of branches and rarely venture on to the ground. Dormice require a diverse range of food plants to provide pollen, fruits and insects throughout the summer. Their complex food requirements mean that the species' presence can be indicative of a diverse woodland habitat.

They are unusually long-lived for rodents (up to 5 years) but only produce one small litter of young per year, which depend on their mother for 6-8 weeks. In late autumn they hibernate for up to 7 months but can also become torpid in summer during poor weather or food shortages.

VISION: Secure the populations of common dormice in Bromley through appropriate woodland management and the creation of links between existing populations and woodlands with the potential to support the species.

AIMS

- *Survey to determine current distribution in Bromley and monitor populations.*
- *Maintain and where possible increase populations*
- *Maintain, enhance and extend suitable habitat.*

1 Current status

1.1 Distribution

The dormouse does not occur in Scotland or Northern Ireland but is mainly restricted to the southern counties of England. It is a rare species in Greater London; Bromley has the closest known population to Central London; Kingston and Croydon may have dormice (LBP). There are 3 known sites in Bromley with dormouse populations at Farnborough, Downe and Cudham. These have been monitored since at least 2001 as part of the National Dormouse Monitoring Scheme.

1.2 Trends

20ha of suitable habitat is required to sustain a viable population; a diverse woodland structure and range of food plants is essential. For this reason the dormouse is a key indicator of desirable woodland and hedgerow condition. The dormouse is listed as a Priority Species under the UK BAP. In the UK the dormouse has become extinct in 7 counties in the past 100 years. It is still widespread in southern England, but even in good habitats it lives at very low densities (less than ten adults per hectare). Coordinated by English Nature, a number of reintroduction programmes are currently in

progress. Numerous organisations are helping to directly or indirectly help the dormouse to turn a corner in it's recovery; a better understanding of dormouse requirements from research projects has helped.

Numbers have declined nationally in line with loss and fragmentation of broadleaved woodland, which has also occurred in Bromley. The UK BAP states that short distances, possibly as little as 100m, can provide barriers to dispersal (unless there are arboreal routes), so leaving isolated, non-viable populations. Evidence of nuts eaten by dormice has not been found in some typically desirable sites in Bromley, where they would otherwise have been expected.

The high percentage of protected woodlands in the Borough by Tree Preservation Order will have helped to retain habitat but not ensure it's appropriate management for dormice. Dormice are not favoured by some forms of woodland management and lack of knowledge about their whereabouts compounds the problem. A preference for high forest, the removal of native species, the planting of non-native trees or species-poor areas will have had an impact on the species. Trees with holes or hollows and log piles are also required for nest sites. Appropriate length of coppice cycle with small coup size (areas less than 0.3ha) are important factors; larger coup sizes have been more typical practice in recent years in Britain, primarily in order to interest contractors in undertaking any work. Many conservation organisations and local authorities have encouraged the return of more traditional management practices since the late 1970's.

Climate change may have a detrimental effect on populations in future. Dormice require warm dry summers for foraging and breeding and cold winters for hibernation. Milder, wetter winters and wetter summers would reduce both breeding success and survival through the hibernation period.

2 Current Factors Affecting Species

- a) Loss or fragmentation of broadleaved woodland.
- b) Inappropriate woodland management such as a decline in coppicing, intensive management or stock incursion into woodland.
- c) Loss of hedgerows and other linear features, such as tree lines, removing essential links which enable dormice to move between small isolated woodlands as well as direct loss of habitat.
- d) Under recording and incomplete knowledge of their distribution in Bromley.
- e) The potential effects of climate change.

3 Current action

3.1 Protection

They are protected under schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the Countryside & Rights of Way Act 2000) and Schedule 2 of the Conservation (Natural Habitats etc.) Regulations 1994 (Regulation 38). Protection has been further extended under Schedule 12 of the Countryside and Rights of Way Act 2000. It is an offence to intentionally or recklessly possess, injure, kill, obstruct or disturb the species' breeding site or resting place.

Planning Policy Statement 9 emphasises the importance of protected species and habitats on which they rely; this is incorporated in the Bromley Unitary Development Plan.

3.2 Management

The common dormouse is one of fifteen UK Priority Species identified as 'Forestry Target Species' in the 'UK SAPs: Priority for the Forestry Commission' (2000).

Organisations such as The Mammal Society and English Nature have produced literature on dormouse conservation. The dormouse forms part of English Nature's Species Recovery Programme, which aims to protect and consolidate the species at selected sites.

Since the mid-1990s, Bromley Countryside Ranger Service, Kent Wildlife Trust and Kent Mammal Group have regularly monitored nest boxes. Around 100 long-surveyed dormouse boxes occur at three sites in the Borough and are monitored between April and November. Records are sent to PTES and feedback provided through 'The Dormouse Monitor' newsletter. High Elms has been host to the second National Great Nut Hunt (2001) and provided dormice to aid the Zoological Society of London's captive breeding programme. Dormouse survey work commenced at Scadbury Park during 2005.

At present the number of licensed surveyors able to examine nest boxes is limited. During the 3rd Edition BBAP, effort will be placed into increasing the pool of licenced dormouse surveyors, who are able to handle dormice for detailed recording purposes.

Being rarely seen in daylight, the likelihood of occasional sighting from members of the public is negligible. Care must also be taken to limit disturbance to dormouse boxes once erected and so their location is kept confidential to avoid unauthorised inspection. However, some public and specialised events have been organised at High Elms (eg. PTES Dormouse Experience).

In Bromley, several woodlands on Council- and privately-owned land are actively managed with dormice in mind, Special consideration is given on Council-owned sites known to support dormice. The Countryside Management Service gives habitat management advice to private landowners. Habitat enhancement work in the Cudham Valley aims to improve connections between key dormouse sites, with the planting of hazel, guelder rose and wayfaring trees. Further boxes were created for other sites in Downe and Cudham during 2005.

4 Proposed Specific Action

Actions	Targets
Dormouse Policy	
1 Ensure that the needs of dormice are considered in local and regional strategies affecting habitats used by dormice. 2 Support action undertaken by the London Biodiversity Partnership or England/UK Partnership to support dormouse populations. 3 Ensure the needs of dormice are taken into account in the planning	1a Ongoing; include in reviews and new strategies. (Links with Woodland HAP). 2a Ongoing, especially as part of Woodland Habitat Action Plan (LBP). 3a Planning applications or works affecting woodlands or hedgerows in suspected dormouse

Actions	Targets
Dormouse Policy	
<p>process and through highway works.</p>	<p>areas should adequately consider and mitigate for their needs; ongoing.</p>
Dormouse Species and Land Management	
<p>4 Ensure the needs of dormice are considered in the management of Council-owned sites including woodlands, country parks and farms.</p> <p>5 Encourage the sympathetic management of woodland for dormice amongst private landowners, including the promotion of England Woodland Grant Scheme.</p> <p>6 Encourage retention and good management of links between woodlands, including hedgerows, and create links between isolated populations.</p> <p>7 Ensure needs of dormice are taken into account by public bodies/statutory undertakers who carry out maintenance on Council-owned land.</p>	<p>4a Take account of management specifically for dormice in all management plans incorporating woodland and hedgerows in key areas, whilst ensuring appropriate action following surveys. Ongoing.</p> <p>5a Provide on-site management advice for owners and managers of sites likely to support dormouse populations or adjacent to known dormouse populations; ongoing.</p> <p>5b Promote via Bromley Knowledge through a reference sheet by 2007.</p> <p>5c Promote as part of woodland workshops; at least one by 2009.</p> <p>6a Maintain and promote Environmental Stewardship and England Woodland Grant scheme to private landowners; ongoing.</p> <p>6b Plant up and maintain hedgerows and wooded strips linking the populations in Downe, Cudham and Farnborough by 2009.</p> <p>7a Promote guidance to developers and statutory undertakers (eg. TfL, National Grid) by 2007; produce a management plan/agreement for sites as appropriate.</p>
Dormouse Research & monitoring	
<p>8 Identify sites supporting dormice and survey for presence in all potential woodland sites and hedgerows.</p> <p>9 Continue to monitor existing nest boxes and establish new nest box areas for monitoring.</p> <p>10 Consider more detailed monitoring of movements of dormice locally.</p>	<p>8a Establish database of dormice locations by 2007 and update as necessary.</p> <p>8b Identify target areas (higher and lower priority sites) for surveying of potential sites, especially where hazel coppice present, by 2007.</p> <p>8c Coordinate surveys in at least 5% of those sites identified by 2009, by undertaking nut searches and using Mammal Society nest tubes.</p> <p>9a Monitor boxes in the Cudham Valley, involving various stakeholders (eg. guides, businesses, Friends groups).</p> <p>10a Investigate permanent marking of dormice to find out their use of wildlife corridors and whether populations within sites are isolated; if appropriate, commence in Cudham Valley by</p>

Actions	Targets
Dormouse Policy	
<p>11 Hold training events for surveyors to extend number holding licences.</p> <p>12 Support national programmes.</p> <p>13 Keep up to date with research and national guidance on dormice and implement as necessary.</p>	<p>2007.</p> <p>11a Organise at least three training events by 2009.</p> <p>12a Ensure dormouse data is shared by NDMP; ongoing.</p> <p>12b Encourage involvement of the public in National surveys, targeting effort in sites identified as part of survey strategy; as appropriate.</p> <p>13a Ongoing; promote as necessary with public, relevant landowners and trained surveyors.</p>
Dormouse Awareness & Publicity	
<p>14 Sustain popularity of the species and pride in it's occurrence in Bromley amongst the general public.</p> <p>15 Encourage the use of sites in the Borough as a venue for regional and national dormouse training courses and workshops.</p> <p>16 Raise awareness of dormice amongst woodland owners.</p> <p>17 Encourage the general public to plant native species hedgerow, shrubs or trees, especially in areas where dormice are most likely to occur.</p> <p>18 Promote habitats of dormice through the provision of walks, talks and events.</p>	<p>14a Organise at least one event per year (eg. during National Mammal Week).</p> <p>14b Promote the species, habitats and habitat requirements, ecology and survey methods in all relevant woodland walks.</p> <p>14c Include information in talks to schools and the public; ongoing.</p> <p>15a Ongoing.</p> <p>16a Hold at least one workshop/demonstration days by 2009. (Link with Woodland HAP and Farmland HAP).</p> <p>16b Provide information on dormice via Bromley Knowledge reference sheet.</p> <p>17a Continue to promote the Greening Bromley's Gardens.</p> <p>17b. Target 1 neighbourhood with gardens by 2009.</p> <p>18 a Ongoing; to Tree Wardens by 2005.</p>

5 Action by

English Nature, Kent Wildlife Trust, People's Trust for Endangered Species, Mammals Trust UK, The Mammal Society, National Grid, The London Mammal Group, local members of the Kent Mammal

Group, Orpington Field Club, London Borough of Bromley, farm and land managers, tree contractors, National Trust, Forestry Authority and Woodland Trust, London Biodiversity Partnership.

6 Complementary Plans

As a key species, the dormouse has an action plan under the UK Plan. The dormouse is identified as a flagship species under the London Biodiversity Action Plan's Woodland HAP.

Other related BBAP action plans include: woodland, hedgerows.

BUTTERFLIES (Order: Lepidoptera)

“A large majority of these moths and butterflies had two or three pairs of pollinia attached to them and invariably to the proboscis” (Charles Darwin).

Butterflies live in a variety of habitats and are probably the most popular of Britain’s insects due to their varied colours and patterns. Around 60 butterfly species occur in Britain, over thirty of these have been recorded in the Borough. Adult butterflies rely on most nectar-rich plants, tree sap and water to survive. Their caterpillars, however, require specific plants from which to obtain their sustenance. The small tortoiseshell and holly blue caterpillars rely on the stinging nettle and holly and ivy respectively; the white-letter hairstreak and chalkhill blue require less common food plants, the elm and horseshoe vetch respectively. Some species are highly mobile, whilst other populations are sedentary and therefore more vulnerable to extinction. The majority of species over-winter in Britain at various stages in their life-cycle; a small number of species migrate from the continent.

VISION: We want butterflies to become a more frequent and appreciated sighting in all areas, whether urban or rural.

AIMS

- *To maintain and increase populations of butterflies in the Borough.*
- *To undertake monitoring of butterflies and feed records into regional and national surveys.*
- *To raise awareness of butterflies.*

Current status

1.1 Distribution

In general, few number of naturally occurring species can be found in inner versus outer London. 34 species of butterfly were found in the Borough between 1980-86 (London Natural History Society Butterfly Atlas Project) of a potential of 47 naturally occurring species in London at that time. Bromley was the top-ranking of all the London Boroughs; this is supported by the Audit forming part of the London Biodiversity Action Plan (2000). Since this time, the clouded yellow has been seen in the Borough.

The distinction between species, and the requirements of each species is too complex to be presented here. The occurrence of species is largely associated with geology (in London, chalk distribution is influential) and habitat. Species ranges, affected by climate, are and will become more important. Some species are more closely associated with woodland (Purple Emperor, relying on sallows; White Admiral, relying on honeysuckle). The brown argus and small blue are most commonly seen in the North Downs area of Bromley; the presence of specific food plants and sward height are critical factors. They tend to occur in distinct colonies and many Blues roost communally on tall grass stems. A number of Skippers and Browns are found in non-calcareous grassland. Roadside verges, field margins, hedgerows, railway embankments, churchyards, parks and gardens support a wide range of species (eg. ‘cabbage whites’, meadow brown, holly blue). Many of these populations are not sedentary, but mobile.

LIST OF BUTTERFLY SPECIES FOUND IN THE LONDON BOROUGH OF BROMLEY (based on data obtained by the London Natural History Society (LNHS) Butterfly Atlas Project 1980-86)		
Family	Species Name	Comments in the London Biodiversity Action Plan (2000), based on information provided by the LNHS.
	(Resident Butterflies and two regular common immigrants*; particularly vulnerable species populations in London are marked by =; () seen in Bromley since 1986 by non-LNHS members).	SCC = Species of Conservation Concern UKBAP; Rare = rare in London, of restricted distribution; Indicative = indicative of typical habitats; Characteristic = characteristic of London; Culturally valued = culturally valued or species with public appeal; Decline = past decline; Easy = Easy to monitor. Note that species marked with * have experienced a 25-49% decline in number or range in Britain over last 25 years.
Hesperiidae (The Skippers)	Small skipper Essex skipper Large skipper Dingy skipper= Grizzled Skipper=	Not listed Not listed Not listed Rare/Indicative/Easy/Decline? Rare/Decline
Pieridae (The Whites and Sulphurs)	(Clouded Yellow*) Brimstone Large White Small White Green-veined White Orange-tip	Not listed Not listed Not listed Not listed Not listed Not listed
Lycaenidae (The Hairstreaks, Coppers and Blues)	Green Hairstreak Purple Hairstreak White-letter hairstreak= Small Copper Small Blue= Brown Argus Common Blue Chalkhill Blue= Holly Blue	Rare/Indicative/Decline/Easy Indicative Rare Easy SCC/Rare/Indicative/Culturally valued/Decline/Easy* Indicative Indicative/Culturally Valued/Easy SCC/Rare/Indicative/Decline/Easy* Culturally Valued/Easy?
Nymphalidae (The Fritillaries, Admirals and Vanessids)	White Admiral= Red Admiral* Painted Lady* Small Tortoiseshell Peacock Comma Dark-Green Fritillary= Silver-washed Fritillary=	Rare/Indicative/ Decline?/Easy Not listed Not listed Not listed Culturally Valued/Easy Not listed Rare/Decline SCC/Rare/Indicative/Decline/Easy*
Satyridae (The Browns)	Speckled Wood Wall Brown Marbled White= Gatekeeper Meadow Brown Small Heath Ringlet	Indicative/Easy Not listed Rare/Indicative/Decline/Easy Culturally Valued/Easy Not listed. Decline?/Easy Easy
TOTAL	34 (35)	

1.2 Trends

Butterflies are good indicators of the quality of the environment. It is usually a good sign when a more diverse range of species is present and where frequency of sightings is high.

In the 18th & 19th Centuries, many London societies had a deep interest in butterflies (eg. Royal Entomological Society of London); butterfly collecting was a popular past-time. Though the abundance of each species is likely to have declined dramatically, the number of species inhabiting London has changed very little over the last 100 years.

Bromley's butterfly populations are significant in London. Butterfly populations can fluctuate dramatically from year to year, so permanent population change is not always easy to detect. Unpredictable weather conditions affect the success of broods. Climate change is likely to have an affect on the national, and therefore local, distribution of species.

Semi-natural habitats, including grasslands, have decreased in area as a result of agricultural intensification, woodland succession and rise in development. The fragmentation and inappropriate management of suitable habitat, and the reluctance of some species to disperse from their breeding grounds, has reduced the viability of colonies, so making them vulnerable to extinction. Prior to 1980, the Silver-Studded Blue and Adonis Blue butterflies are likely to have been present in the Borough, having been recorded in the south-east London area; Long-tailed Blues were known to occur in the region in the late 19th Century.

The increasing popularity of butterflies amongst gardeners and the restoration of field margins, and similar habitats on landholdings, are likely to be helping butterfly populations in these localities and in providing 'links' for dispersal of individuals. The 'Garden Butterflies Count' run by Butterfly Conservation in 2002 attracted >30,000 participants nationally. The production of The Millenium Atlas of Butterflies in Britain and Ireland in 2001 is a landmark publication. Butterfly Conservation has appointed a regional development officer post for Greater London.

2 Current Factors Affecting Species

- (a) Loss of habitat to development.
- (b) Woodland succession on grasslands, resulting in loss of suitable conditions for food plants, adult butterflies or associated ants.
- (c) Extremes in seasonal weather conditions.
- (d) Increased use of insecticides.
- (e) 'Improvement' of grasslands, leading to species-poor swards.
- (f) Frequent cutting (eg. road verges) or intensive grazing (removing larval food plants, eggs and larvae).
- (g) Direct removal of larval food-plants (eg. removal of ivy from walls and trees; cutting of stinging nettles; herbicide treatments).
- (h) The hard-landscaping or planting of non-native plants which are nectar/pollen-poor, to minimise need for maintenance.
- (i) Increasing popularity of planting some butterfly-friendly plants in gardens (eg. Buddleia).

3 Current Action

3.1 Protection

The small blue, chalkhill blue and white-letter hairstreak are protected on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended by the Countryside & Rights of Way Act 2000). Some sites on which they occur are, however, of SSSI or SINC status and therefore receive indirect protection.

3.2 Management

The Countryside Management Service (LBB) and Bromley Countryside Ranger Service (LBB), Kent and London Wildlife Trusts and Orpington Field Club, regularly undertake management of a number of grasslands (through scrub clearance, grass cutting and grazing) and woodlands, for example. Volunteers have been trained up to undertake butterfly surveys and transects. Butterfly rides have been created or re-established through woodland to join up otherwise isolated sites. Some new areas of grassland have been sown adjacent to existing semi-natural grasslands, and will help to provide extra foraging and breeding habitat for butterflies.

The London Natural History Society and Butterfly Conservation Society hold some records for species in the Borough. English Nature has undertaken butterfly survey work on some SSSIs. Other surveys and monitoring programmes for specific sites have been undertaken (eg. High Elms Country Park, Salt Box Hill Nature Reserve, Strawberry Bank, Hang Grove/Downe Bank, Scadbury Park, Jubilee Country Park).

Butterflies are promoted through guided walks and talks, as well as at events; more than 10 were given over 2004-5.

4 Proposed Specific Action

Actions	Targets
Butterflies Policy	
<p>1 Devise an overarching strategy for butterflies.</p> <p>2 Ensure that management for butterflies form key conservation objectives in other relevant strategies arising from BBAP.</p> <p>3 Develop links with Butterfly Conservation's officer for Greater</p>	<p>1a Identify key sites and important and potential corridors (habitat links) for butterflies in the Borough, and potential surveying targets.</p> <p>1b Strengthen links with other south London Boroughs to identify opportunities for butterfly corridors.</p> <p>1c Ensure particular emphasis on species of conservation concern or of rarity in London, but also include more common species typical of urban areas.</p> <p>1d Outline objectives and produce a forward vision and publish on Bromley Knowledge by 2007.</p> <p>2a Incorporate butterflies into the grasslands strategy (taking account of sward-height sensitive species); woodland strategy; hedgerow/verge strategy. (See relevant HAPs).</p> <p>3a Ongoing.</p>

Actions	Targets
Butterflies Policy	
<p>London and other members of Butterfly Conservation.</p> <p>4 Hold regular meetings of Butterfly Action Group.</p>	<p>4a Ongoing.</p>
Butterflies Species and Land Management	
<p>5 Effectively manage important sites and establish links/corridors between and within existing habitats of importance for butterflies.</p> <p>6 Extend the area of suitable habitat, particularly where these occur alongside existing key colonies.</p> <p>7 Create, positively manage and promote examples of butterfly-friendly gardens, parkland areas and flower-beds in the Borough.</p> <p>8 Create butterfly-friendly areas as part of planning applications.</p> <p>9 Encourage the public to become involved in practical management of chalk downland of particular importance to butterflies.</p>	<p>5a Continue to manage and further enhance links in the valley between Cudham and Downe and promote as part of Darwin's 2009 celebrations. (Link to Chalk Grassland HAP).</p> <p>5b Target effort in the Biggin Hill valley, chalk downland sites. (Link to Chalk Grassland HAP).</p> <p>5c Manage rides and glades for butterflies, where appropriate, as part of woodland management plans (Link to Woodland HAP); maintain High Elms Country Park and Scadbury Park rides (ongoing).</p> <p>6a Identify creation of new grassland, new woodland and hedgerows and soft-landscaping with suitable species as part of the strategies.</p> <p>6b Create 3ha of new semi-natural grassland by 2009.</p> <p>7a Identify existing areas providing good examples inc private gardens; promote on site and/or on Bromley Knowledge.</p> <p>7b Create 4 permanent areas by 2009.</p> <p>7c Promote via Beck Corridor Project implementation by 2007.</p> <p>8a Encourage soft-landscaping with suitable native and/or non-native species ongoing and through guidance notes.</p> <p>9a Focus on West Kent Golf Course and sites within Biggin Hill valley by 2009. (Link with Grassland HAP).</p>
Butterflies Research & Monitoring	
<p>10 Source, collate and review existing records of butterflies in the Borough; draw together previous ad hoc sightings.</p> <p>11 Monitor existing and future butterfly corridors to establish their effectiveness and make any necessary recommendations.</p>	<p>10a By 2007. (Contact the Butterfly Conservation Society and it's local members for assistance; identify sites which have been regularly monitored; write-up ad hoc sightings; compile information on computer and analyse).</p> <p>11a Focus monitoring on Cudham Valley; revise management where necessary; consider one further key site complex by 2009.</p>

Actions	Targets
Butterflies Policy	
<p>12 Monitor Blue butterfly populations on key grassland sites annually; where possible, at more frequent intervals during their emergent times.</p> <p>13 Monitor grass heights (where appropriate), food-plants and all butterfly species presence/abundance on selected sites in the Borough, to monitor for long-term changes as a result of management; particularly rare species or those listed in LBP.</p> <p>14 Train up volunteers as butterfly surveyors.</p> <p>15 Draw up a programme of surveying to enable 'snapshot' butterfly surveys to gauge the range, abundance and distribution of butterfly species in the Borough, seeking coverage of every 1km² in the Borough.</p> <p>16 Monitor butterflies along 'butterfly transects' on an annual or less frequent basis.</p> <p>17 Involve residents in surveying butterflies in their gardens, allotments, local parks and school grounds.</p> <p>18 Establish the location of key populations of the often under-recorded White-letter Hairstreak, White Admiral and Purple Hairstreak.</p>	<p>12a Set up monitoring programmes on 2 sites supporting Blue butterfly populations by 2007.</p> <p>13a Commence monitoring on 2 sites in the Borough by 2007 (other than 'blue' sites).</p> <p>14a Hold at least three training days by 2009, also with a view to securing 20 core butterfly surveyors.</p> <p>15a Devise survey sheet</p> <p>15b Undertake Butterfly Transects along 15%+ of Rights of Way in the Borough by 2007 with emphasis on Circular Walk routes (noting land use);</p> <p>15c Where density of RoW is low, seek access to landholdings, especially in SINCS/SSSIs.</p> <p>16a Continue and/or establish butterfly transects in parks, opens spaces and country parks with involvement of Friends of' groups; at least 5 by 2009.</p> <p>17a Involve children and residents in butterfly monitoring along the Beck Corridor by 2007.</p> <p>17b Involve at least 2 school sites in observing and recording butterflies in their school grounds and nearby open space by 2009.</p> <p>17c Encourage observation and recording of sites identified under 7 by 2009.</p> <p>17d Encourage new groups involved in the practical management of chalk downland sites, where butterflies are of particular importance, to learn about and help record butterflies.</p> <p>18a Investigate woodlands and hedgerows within 2km of key populations by 2009.</p>
Butterflies Awareness & Publicity	
<p>19 Inform private landowners about the requirements of butterflies; provide advice on management</p>	<p>19a Ongoing; hold one Butterfly Workshop for landowners by 2009.</p>

Actions	Targets
Butterflies Policy	
<p>and creation, whilst highlighting grant availability.</p> <p>20 Raise public awareness of the value of native and non-native plant species for larvae and adult butterflies, including the retention of long grass.</p> <p>21 Promote butterflies via walks, talks, events and publicity.</p>	<p>20a Promote appropriate planting via the Greening Bromley's Gardens, especially via website.</p> <p>21a Organise at least one event, emphasising butterflies, a year.</p>

5 Action by

Land managers, English Nature, Butterfly Conservation Society, Orpington Field Club, London Borough of Bromley, DEFRA, London Biodiversity Partnership.

6 Complementary Plans

No UK Action Plan exists for any of the butterfly species present in Bromley. A Species Audit for

Butterflies exists as part of the London Biodiversity Action Plan; no species action plans are currently in place but consideration is given in existing habitat action plans (eg. Chalk grassland). Some butterflies are listed as flagship species in London's habitat action plans: Marbled White for chalk grassland; Small Copper for acid grassland; Speckled Wood for woodland; Holly Blue for Churchyards & Cemeteries and Private Gardens; Small Tortoiseshell for Private Gardens .

Other related BBAP action plans: woodland, hedgerows, grassland, lowland heath & mire, urban habitats, farmland.

GLOW-WORM (*Lampyris noctiluca*)

The glow-worm is a beetle. The flightless, adult female uses a bright green light, produced by an organ on her abdomen, to attract males, which fly around after dark. Adults may be seen from May to September, with numbers peaking in June and July. They feed on snails and slugs, which they paralyse by injecting a toxin through their hollow mandibles. The adult life is brief, with few surviving more than a week. Eggs hatch by early autumn, and the larvae pass through two winters before reaching maturity.

VISION: These beetles to light up our grasslands and meadows, becoming more common on summer nights; we want populations to increase their sparkle.

AIMS

- *To establish the distribution of glow-worms.*
- *Maintain and increase existing populations through suitable habitat management.*
- *Increase the amount of favourable area for colonisation by glow-worms.*
- *Increase public awareness of glow-worms and the threats they face.*

1 Current Status

1.1 Distribution

The glow-worm is a widespread and relatively abundant insect, especially in south-east England; they are less common in urban areas. Even in ideal habitat, its distribution is patchy. They seem to prefer a mixture of open grass and trees or scrub. Glow-worms can be found on moorland, heathland, and quarries and in grassland of every description including downland, pastures, meadows, roadside verges, railway embankments, churchyards, golf course and lawns. Glow-worms prefer unimproved grassland and are particularly abundant on chalk.

The London Biodiversity Action Plan highlights the species' rarity in London and past decline, as well as the glow-worms importance as an indicator of typical habitat. It also is identified as a species of cultural importance. The glow-worm has been confirmed in four London Boroughs, including Bromley, Barnet, Croydon and Hillingdon. Recent surveys and calls for public sightings has helped to gain a clearer picture of where some populations of glow-worms occur (eg. Cudham). Females are easier to detect than males but their presence does not guarantee a good breeding population.

1.2 Trends

Little quantitative population data is available for the species, however the glow-worm appears to have been declining nationally over the last 50 years. The cause for this decline, which is not confined to any one habitat, remains unknown and largely unstudied. Habitat loss and intensive management of sites will have had negative effects on populations. The glow-worm's poor powers of dispersal, means that any local extinction is likely to be permanent, unless re-introductions are made.

Pesticide use has increased dramatically in urban and rural areas during the 20th Century. The predatory life-style of glow-worms means that the toxic effects of molluscicides and insecticides are likely to have a cumulative effect on individuals, especially in larval fat reserves.

Artificial lights are a common feature of the modern world. They are known to reduce the male's ability to locate females either by making the female less conspicuous or by actively attracting males.

Climate change may have a direct or indirect affect on glow-worm populations in future. Males are reluctant to fly on wet nights, so a spell of bad weather during the crucial few days of its life may prevent it from finding a mate. Shifts in vegetation and snail fauna will influence glow-worm populations too.

2 Current factors affecting species.

- a) Habitat destruction.
- b) Changes in habitat management (eg. scrub clearance, grazing, coppice regime)
- c) Habitat fragmentation.
- d) Continuing use of pesticides.
- e) Sustained and increased use of artificial lights in urban and rural areas.
- f) Climate change
- g) Visitor trampling and collection.
- h) Lack of knowledge about their distribution or full ecology.

3 Current action

3.1 Protection

At present the glow-worm does not enjoy any direct statutory protection. Some of the sites on which they occur are, however, of at least SINC status and therefore receive indirect protection.

3.2 Management

To date, no specific management is being undertaken to conserve the glow-worm. Reliance is being given on the fact that they benefit incidentally from habitat management undertaken for general invertebrate fauna or for other reasons.

Press articles and more than 5 walks and talks have been held to promote glow-worms, their conservation and recording. Displays have also been put up at least once a year at High Elms Nature Centre.

4 Proposed Specific Action

Actions	Targets
Glow-worm Policy	
1 Ensure that management for glow-worms form key conservation objectives in	1a Reference to glow-worms incorporate within woodland, hedgerows/verge and grassland strategies.

Actions	Targets
Glow-worm Policy	
<p>relevant local and regional strategies.</p> <p>2 Support the London Biodiversity Partnership in the implementation of any habitat action plans which benefit glow-worms.</p> <p>3 Take account of glow-worm strongholds as part of the planning process and in other schemes, such as highway works.</p> <p>4 Hold regular meetings of the Glow-worm Action Group.</p>	<p>2a Ongoing.</p> <p>3a Ongoing.</p> <p>4a Ongoing.</p>
Glow-worm Species & Land Management	
<p>5 Maintain woodland-scrub-grassland mosaics on sites with glow-worm populations and discourage use of pesticides and fertilisers.</p> <p>6 Encourage private landowners to create suitable habitats close to existing glow-worm colonies.</p>	<p>5a Provide on-site advice to landowners following initial surveys; ongoing.</p> <p>5b Provide information via Bromley Knowledge website reference sheet.</p> <p>6a Draw up list/map of areas (and associated priorities) for targeting management effort and advice.</p> <p>6b Ensure all camp sites and golf courses (public and private) supporting glow-worms undertake management practice which helps to sustain population by 2009.</p> <p>6c At least three further landowners by 2009.</p>
Glow-worm Research & Monitoring	
<p>7 Establish and maintain records of past and present sightings of glow-worms, through public engagement and targeted consultation with landowners.</p>	<p>7a Gather information on sites where glow-worms were previously recorded but have since been lost, and seek to identify the causes of these losses</p> <p>7b Contact local moth recorders directly via entomological organisations by/in 2006 to uncover information to ascertain whether glow-worms have been trapped in light traps in the past and if so, their location; sustain involvement.</p> <p>7c Invite further records and new sightings to establish distribution of existing colonies by 2007.</p> <p>7d Compile on computerised database by 2007 and keep updated thereafter.</p> <p>7e Invite adhoc sightings through Bromley Knowledge website.</p> <p>7f Identify 'gaps' in survey data where glow-worms may not have been spotted, in order to target further survey effort.</p> <p>7g Source enthusiasts who wish to undertake detailed surveying, following training and support.</p>

Actions	Targets
Glow-worm Policy	
<p>8 Identify strongholds by carrying out more detailed surveys of existing glow-worm colonies and investigate adjacent areas, involving landowners and volunteer surveyors.</p> <p>9 Monitor selected populations and associated factors.</p> <p>10 Explore the feasibility of establishing new colonies on suitable sites, which are too isolated to allow natural colonisation.</p> <p>11 Investigate and keep up-to-date with research on glow-worms and requirements of their main food item, snails.</p>	<p>8a Devise survey strategy in 2006 and commence implementation, following training of recorders.</p> <p>8b Support existing recorders and train a further core group of recorders.</p> <p>8c Coordinate detailed survey of priority target sites by 2007, devising simple survey form incorporating aspects of site conditions.</p> <p>8d Coordinate detailed survey of at least 15% of remaining areas by 2008.</p> <p>8e Assess the status of species at the landscape level and help this inform management.</p> <p>9a Devise detailed monitoring method (undertaken throughout the season, at least every two years) and monitor five contrasting sites where glow-worms occur.</p> <ul style="list-style-type: none"> - Monitor at High Elms Country Park. (Site 1) - Ensure at least 1 youth camp sites in the Cudham valley undertake regular monitoring of glow-worms and share records. (Site 2) - 3 further sites by 2009 <p>10a Contact other organisations with experience in breeding and re-introductions, using local populations, by 2009.</p> <p>11a Draw together information on an on-going basis and promote as appropriate.</p>
Glow-worm Awareness & Publicity	
<p>12 Advise land managers on the conservation requirements of glow-worms.</p> <p>13 Organise night-time walks and events to generate landowner interest, promote best practice and to allow the general public to see glow worms for themselves.</p> <p>14 Raise awareness through press releases and the involvement of the general public in surveys.</p> <p>15 Further links with Croydon and Barnet and Hillingdon to publicise the species and identify and strengthen populations.</p>	<p>12a Provide guidance notes (in combination with other invertebrates) by 2009, via Bromley Knowledge.</p> <p>13a 2 by 2009.</p> <p>14a At least one press release by 2009; see 'Research and Monitoring' above.</p> <p>15a Through Glow-worm Action Group, share experiences and consider joint approaches from 2006.</p>

5 Action by

English Nature, entomological organisations, London Natural History Society, Orpington Field Club, London Borough of Bromley, London Wildlife Trust, Kent Wildlife Trust, land managers.

6 Complementary Plans

No equivalent species action plans exist under the UK or London Plans. The glow-worm is not listed as a flagship species in any of the LBP Habitat Action Plans, but its presence as part of the general invertebrate fauna of acid grassland, chalk grassland and heathland is acknowledged.

Other related BBAP action plans include: grassland, farmed land.