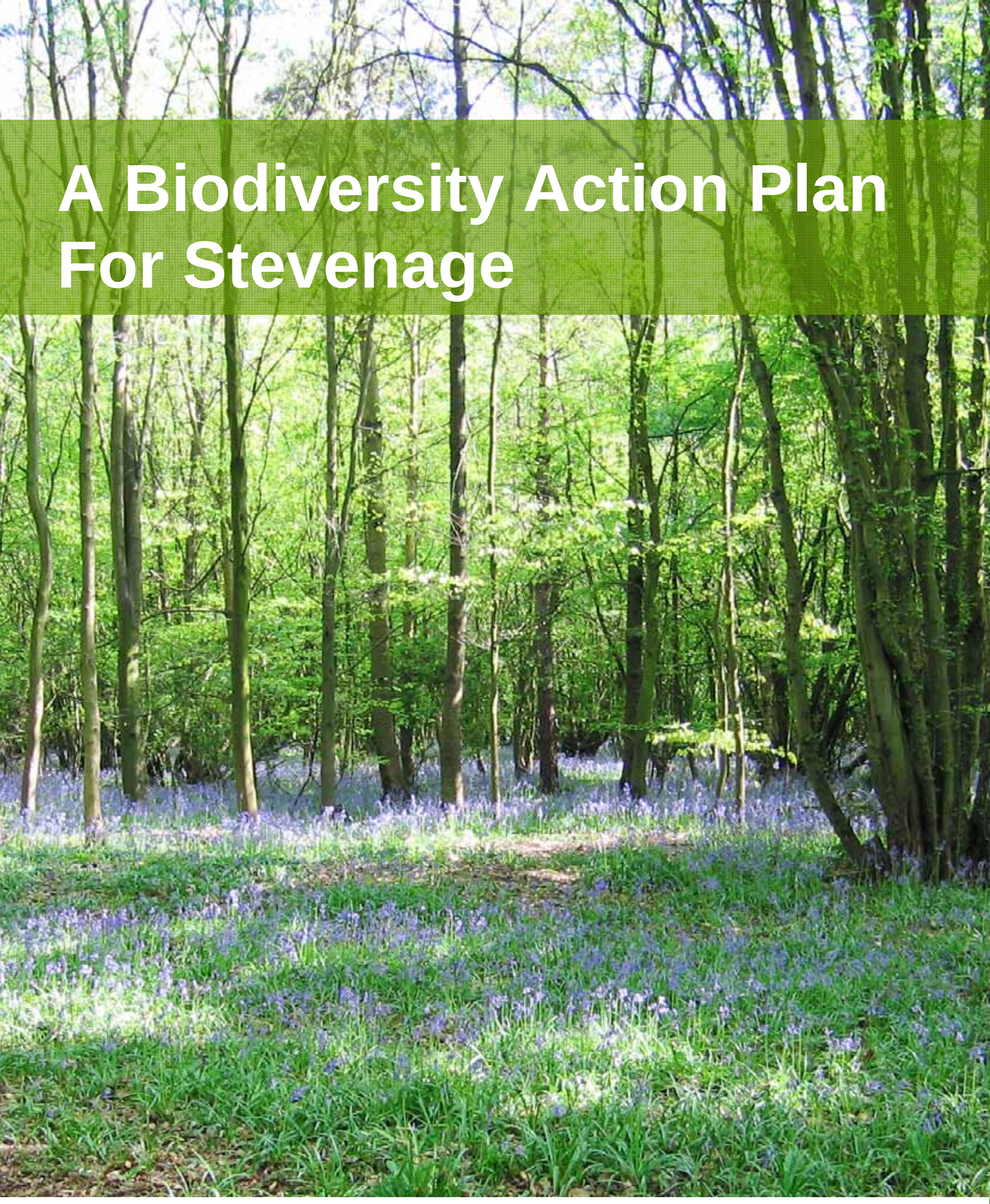
A Biodiversity Action Plan For Stevenage



Stevenage BOROUGH COUNCIL

THE wildlife TRUSTS Herts & Middlesex

THE VISION

To increase Stevenage's biodiversity by conserving, restoring, recreating and reconnecting wildlife habitats, to increase awareness and appreciation of Stevenage's wildlife, to encourage participation in conserving its biodiversity and to ensure that nature is close to everyone's doorstep.

LIST OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION

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> (Biodiversity: The UK Steering Group Report, 1995).

Biological diversity (biodiversity) is the variety of life. Not only is it the whole range of plant and animal species but also the local variations found within these species. The intricate network of ecosystems, habitats and species comprising biodiversity provides the support systems that sustain human existence. It provides many of the essentials of life – oxygen, water, food, clothing, health and relaxation. This value extends from the spiritual benefits to be gained from contact with nature, to the economic potential of wild species for new sources of food or medicines.

The natural world enriches the quality of our lives through tourism, leisure and daily contact with wildlife. The wild ancestors of many of our major crops such as wheat and barley provide genetic material, which can provide resistance to crop diseases and help reduce the need for pesticides. Wetland habitats act as natural pollution filters, buffer the effects of flood and drought, and reduce soil erosion.

However, human activities continue to deplete biodiversity at an ever-increasing rate. In the UK we have lost over 100 species during the 20th century, with many more in danger of disappearing, especially at the local level. This is ultimately against our own interests. Our future requirements are uncertain. If we continue to degrade what remains of our natural resources we will dangerously reduce the planet’s capacity to support not only wildlife but also people. The maintenance of biodiversity is a key test of our ability to maintain a healthy natural environment and long-term sustainability

The Rio de Janeiro ‘Earth Summit’ in 1992 was, in part, a response to the growing awareness of the importance of the global environment and a wide recognition of the continuing loss and damage. The United Kingdom was one of over 150 countries from around the world, which signed the Convention on Biological Diversity. With each country required to produce a plan of action, this now provides the basis for international co-operation to maintain the world’s biodiversity.

Article 6a of the Convention requires signatory countries to:

‘develop national policies, plans or programmes for the conservation and sustainable use of biological diversity’.

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The report of the UK Biodiversity Steering Group sets out a detailed approach to conserving biodiversity in the United Kingdom. The report recognises that if biodiversity conservation is to be successfully implemented it requires a means of ensuring that actions are undertaken in an integrated manner. Key recommendations were as follows:

a. The production of national habitat and species action plans
b. The establishment of a network of local records centres
c. The production of local biodiversity action plans
d. The need to raise awareness of the importance of biodiversity conservation.

The *Guidance for Local Biodiversity Action Plans – Guidance Note 1* sets out the functions of a Local Biodiversity Action Plan as:

- To ensure that national targets for species and habitats, as specified in the UK Action Plan, are translated into effective action at the local level.
- To identify targets for species and habitats appropriate to the local area, and reflecting the values of people locally.
- To develop effective local partnerships to ensure that programmes for biodiversity conservation are maintained in the long-term.
- To raise awareness of the need for biodiversity conservation in the local context.
- To ensure that opportunities for conservation and enhancement of the whole biodiversity resource are fully considered.
- To provide a basis for monitoring progress in biodiversity conservation, at both local and national level.

In 1998, as Hertfordshire's response to the national biodiversity planning process, a 50-year vision for the wildlife and natural habitats of Hertfordshire was prepared on behalf of the Hertfordshire Environmental Forum by Herts & Middlesex Wildlife Trust. This represented the first Biodiversity Action Plan for the county and was one of the earliest to be produced in England. It identifies those habitats and species that are a priority for conservation action and provides a valuable source of information on the county's natural assets.

In 2002, a Hertfordshire Biodiversity Officer was appointed and a review of the achievements against the targets identified within the action plans was undertaken. Progress was variable, with wetlands work considerably advanced, whilst other plans were less successful. During 2005/06, a review of the original habitat and species action plans, focussing solely on the objectives, targets and actions, was undertaken, led by the Biodiversity Officer and supported by the various leads of the species and habitat action plans.

To help focus the activities during the next five years, the Hertfordshire Biodiversity Partnership relaunched the Biodiversity Action Plan (BAP) in March 2006 to incorporate the revised habitat and species action plans.

Local authorities in England and Wales have a key role to play in the conservation of biodiversity and this is now recognised and formalised within Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, where:

"*Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.*"

As such, Local Authorities now have a duty to work to maintain and increase populations of species and to enhance and create BAP habitats.

This five year Biodiversity Action Plan for Stevenage Borough covering the period 2010-2014 inclusive has been prepared in response to the updated Hertfordshire Biodiversity Plan. It updates an earlier Stevenage Biodiversity Action Plan that was drafted in 2004. The work achieved locally through this action plan will contribute to targets set for the county through the Hertfordshire Biodiversity Action Plan. It is important that the results of the work in Stevenage are captured and reported through the national Biodiversity Action Reporting System, co-ordinated in Hertfordshire by the Biodiversity Officer.

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So Stevenage is a community strategy covering housing, security, health, sports, art, culture and the environment:-

"The community strategy is the main partnership document for the town. It shows how we are working together to improve Stevenage and contribute to the sustainable development of the town- that means meeting today's needs without compromising the ability of future generations to meet their own needs…….Our community strategy sets out a long-term vision of how we want Stevenage to be in 2021."

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“Local people value open spaces in the town – somewhere to relax, to exercise and to enjoy nature.”

The Green Space Strategy sets out the council’s objectives in terms of protecting, managing and improving the green spaces within Stevenage covering parks and gardens, natural and semi-natural open spaces, amenity green space, provision for children and young people, outdoor sports facilities, allotments and community gardens, cemeteries and churchyards and green corridors. In terms of the natural and semi-natural open spaces, the vision is: -

“A pleasant, litter-free, safe and well-managed site utilising both natural and semi-natural features to encourage conservation, introduce and sustain biodiversity and promote education. Establish a town-wide hierarchy of sites to provide a balance between access and protection of a diverse range of habitats and species.”

In particular, under the heading of Natural and Semi-natural Open Space, the strategy lists two objectives that are directly related to the Biodiversity Plan: -

“Objective 6

Complete the Review of the Biodiversity Plan.

Objective 7

Establish a hierarchy of sites and needs and, in line with the Biodiversity Action Plan, establish management plans for all sites having particular regard to the requirements of national Indicator 197.”

Therefore, the Biodiversity Action Plan contributes to particular threads of the So Stevenage and Green Space Strategies and should be considered in association with them.

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These SMART objectives are presented in Habitat Action Plans subdivided into Grassland, Woodland, Ancient Hedgerows, Wetland and Neighbourhood Nature. In some cases the actions are associated with subsequent surveys of key indicator species to monitor the effectiveness of the management work.

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LIST OF CONTENTS

LIST OF TABLES

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2. HABITATS WITHIN STEVENAGE BOROUGH

2.1 General

A Habitat Survey of the Borough of Stevenage was performed as part of a three year Countywide 'Phase 1' surveying programme between 1994 -1997. This work, part of the Hertfordshire Habitat Survey Project produced a variety of useful data, identifying habitat types and their extent across the Borough. In addition to this, other biological information from the Borough, including data on Wildlife Sites is held at Hertfordshire Biological Records Centre at County Hall, Hertford and at Herts and Middlesex Wildlife Trust.

The following sections discuss the geology, habitats and species present in the Borough of Stevenage, leading on to an evaluation of the key targets for this Biodiversity Action Plan.

2.2 Geology

The geology of the district is the major factor determining its topography and soils. These in turn, together with the climate, determine the natural vegetation and influence farming practices in the wider countryside. The solid geology of Stevenage is relatively simple, comprising chalk of the Cretaceous period. The chalk not only determines the topography of the area, but is also important as an underground aquifer. The water levels within this aquifer are crucial in sustaining the levels of rivers, streams, springs and flushlines.

The superficial deposits comprise Argyllic Brown Earths on Decalcified Boulder Clay for the majority of the Borough. Chalky and Gravelly Solifluction Deposits just impinge to the east and west with Glacial and River Gravels being found in the southern tip of the Borough in association with the Stevenage and Aston End Brooks. More subtle variations still account for the variations in grassland type found within Stevenage, with grasslands to the far west, near Knebworth, displaying acidic characteristics and grasslands to the east exhibiting a calcareous influence in places.

Prior to the development of Stevenage New Town, the easily tilled soils of the area supported a mix of arable and livestock farming. The field patterns and hedgerows of these fields would have probably originated from the medieval period or earlier. Historically, substantial areas of woodland were not removed until the 12th and 13th centuries, leaving a scattering of woodlands within the field systems.

However, most of the features and habitats of the open countryside have been lost with the development of Stevenage New Town. Present day Stevenage is very much urban in character but benefitting from large expanses of public green open space. Nonetheless, remnants of older habitats and landscape features still survive as encapsulated countryside and it is these features that provide the majority of the Borough's wildlife interest. Old woodlands in particular are well represented with the majority retained within the new town development, although many have been structurally altered through replanting.

Stevenage lacks a major river system although the Stevenage Brook and Aston End Brook are sourced within the Borough and are important as the only examples of natural running water habitats. However, if the aquifer is depleted, flows will be reduced, making them extremely vulnerable to pollution and drying-out.

2.3 Habitat Overview

2.3.1 General

Stevenage was measured as 2,598 hectares (ha) during the Habitat Survey. The total area of all habitats excluding urban and arable farmland within the Borough is 612.6 ha (23.57%). This figure is somewhat less than the county total of 33.3%, reflecting the urban nature of the Borough.

The main habitat types found across the Borough are as follows:

- Woodland
- Grassland
- Ancient Hedgerows
- Wetland
- Neighbourhood Nature

The characteristics of these habitats are described in the following sections.

2.3.2 Woodlands

The total area of woodland habitats (including parkland) is 131.5 ha, or 5.06% of the Borough area, somewhat less than the national average of 9% and the county average of 9.27%. A total of 58.3 ha (44.33) of all the woodland in Stevenage is semi-natural broad-leaved. Plantations amount to 65.8 ha (50.04%), of which 18.4 ha is broad-leaved, 11.0 ha coniferous and 36.4 ha is a mix of broadleaf and conifer species.

Within Stevenage, 53.99 ha of woodland are identified as ancient (from Natural England's Provisional Ancient Woodland Inventory) that is 41% of all woodland within the Borough. In addition, another 23.76 ha (18.07%), are believed to be ancient although it does not appear on the Ancient Woodland Inventory. Parkland habitats account for 7.4 ha or 0.28% of the Borough. Included in this category are ancient deer parks through to the more modern parks laid out this century. Scrub communities cover an area of 6.0 ha representing 0.23% of the Borough.

Forming the majority of the wildlife resource in Stevenage, the woodlands represent both an ecologically and scenically important habitat, with nearly all the woodland identified as ‘Wildlife Sites’ being ancient in origin.

The woodland type characteristically found throughout Stevenage is the Oak and Hornbeam mix, with Bluebell dominant in the ground flora. **The EU Habitats Directive has identified this woodland type as being internationally important.** Representing the largest area of any long-standing semi-natural habitat within the Borough, Stevenage has a particular responsibility to maintain and enhance this wildlife resource. Monk's and Whomerley Woods within Fairlands Valley Park form a particularly extensive tract of woodland with a diversity of structure and associated species.

However, large scale replanting in much of the wood has replaced ecologically valuable native trees with introduced species of lower conservation value. The majority of the woods within the Borough were found to have, to a greater or lesser degree, a non-native planted component. A number of smaller woodlands, although believed to be ancient in origin, were not selected as Wildlife Sites because their ecological interest had been substantially degraded by such plantings.

2.3.3 Grasslands

Grassland habitats of all types have an area of 446.9 ha, accounting for 17.20% of the Borough, somewhat less than the county figure of 21.3% for this habitat type. A total of 355.3 ha (80%) of all grassland has been substantially 'improved' for agriculture or amenity use, resulting in a decrease in plant diversity. This comprises 17.7 ha of improved grassland, 26.4 ha of species-poor semi-improved grassland and 311.2 ha of amenity grassland.

A further 72.5 ha (16%) is semi-improved but still retains some wildlife interest. This includes 62.5 ha of neutral grassland, 9.2 ha of acidic grassland and 0.8 ha of calcareous grassland. Only 19.1 ha (4%) remains unimproved and of high ecological value, a figure surprisingly close to the county average of 4.3% given the urban nature of the Borough. This comprises 10.2 ha of neutral, 6.6 ha of acidic and 2.3 ha of marshy grassland. All unimproved grasslands are selected as County Wildlife Sites in recognition of their ecological importance.

Ecologically important grassland habitats are somewhat scarce within the Borough, with the best examples comprising long-standing grasslands, which have been encapsulated within the New Town. An exception is Martin’s Way where the steep banks formed in the construction of the dual carriageway have revealed the underlying chalk on which a chalk grassland wildflower mix has been sown. Over subsequent years the resultant species-rich flora has been colonised by plant and insect species. It is now a habitat of high wildlife interest, albeit artificial in origin.

Of the long-standing grasslands within the Borough, those in the west are slightly more acidic in nature, with Six Hills grassland supporting species such as Harebell and Early Hair-grass in the short mown sward. Towards the east

of the Borough a more calcareous influence can be found, with Poplars Meadow supporting a particularly diverse flora including indicator species of calcareous, neutral and acidic conditions in its flora.

To the south Stevenage Brook Marsh provides for the only significant area of marshy grassland within the Borough. This area comprises blocks of marshy grassland and tall herbs surrounded by drier semi-improved grassland. The marshy areas support plants such as Lesser Pond Sedge, Greater Bird's-foot-trefoil and Ragged Robin as well as a range of commoner species. Currently the wetter areas are becoming increasingly rank and with the effect of increasingly long dry spells, are in danger of degrading through lack of appropriate management.

2.3.4 Ancient Hedgerows

Stevenage Borough consists of a number of local areas eg Chells, Poplars, Broadwater that are connected not only by roads but also by pedestrian routes and cycle ways. Many of these cycle ways are old country lanes with their original ancient hedgerows still lining the route. These hedgerows are a precious habitat in the middle of a new town and contribute significantly to biodiversity.

The hedgerows are a mixture of mature standards such as Oak, Ash, Hornbeam and Field Maple and the more traditional hedgerow species such as Hawthorn, Blackthorn and Elder. Many of the hedgerows show signs of coppicing in the past but most have not been managed for several years. Therefore a management strategy needs to be developed as a matter of urgency to rejuvenate these important hedgerow habitats and to ensure their future survival.

2.3.5 Wetlands

Wetland habitats of all types (fens, mires and swamps but excluding open water and marshy grassland) cover an area of only 0.4 ha accounting for 0.02% of the Borough. This figure is comprised solely of Ridlins Mire. Open still water bodies greater than 0.3 ha in area cover 9.87 ha accounting for 0.38% of the Borough, almost equal to the county average of 0.39. Ponds of 0.3 ha or less number 20 in the Borough and in many areas represent the only aquatic habitat. Streams and rivers have a total length of 4.6 km. Both these totals are substantially less than the average for the county, indicating the scarcity of all wetland habitats within Stevenage and highlighting the need prioritise these for action and to conserve and enhance the remaining aquatic resource.

The Borough's wetland habitats are notable in including Ridlins Mire, an HMWT Nature Reserve, one of the few examples of a valley mire peat bog within the county. The flora includes species that are uncommon or scarce within the county including Greater Tussock Sedge, Great Horsetail and Marsh Valerian. The mosaic of valley mire habitat, unimproved grassland and scrub provides an important combination of habitats of particular value to

scarce and rare invertebrate species with the site listed on Natural England's Invertebrate Site Register.

The only large water bodies within Stevenage, Fairlands Valley Park Lakes provide an aquatic habitat of considerable wildlife potential. The current uniform bank profile and intensive mowing of surrounding grassland provides limited wildlife habitat, though opportunity exists for significant improvement. Nearby remnants of ancient woodland and patches of more species-rich grassland within the amenity sward all offer the potential to develop an extensive area of wildlife value.

Elsewhere in the Borough, ponds provide a valuable habitat for various aquatic flora and fauna with a number of old ponds, pre-dating the new town development. With appropriate management these ponds and their surrounding habitats could sustain valuable amphibian communities including the internationally scarce Great Crested Newt, which has been recorded in one or two ponds in Stevenage.

2.3.6 Neighbourhood Nature

Urban habitats and the built environment were not included in the Habitat Survey, though the ecological value of this habitat type is now widely recognized, and can be argued to be of particular importance in an increasingly urbanized Borough such as Stevenage. Important species such as Song Thrush, House Sparrow and Great Crested Newt can be found in residential gardens, as can bats, which also make use of the built environment itself, roosting in attics, roof voids, under roofing tiles and within other structures.

Allotments can also provide a haven for wildlife, with their mix of cultivated ground, unused plots and untended margins and corners. These latter areas provide a diverse structure and may contain species of grasses and wild flowers that are attractive to small invertebrates, butterflies, grasshoppers and crickets.

Artificial habitats such as waste ground and bare ground were included in the Habitat Survey, and account for 4.4 ha or 0.17% of the Borough, although this figure will tend to alter owing to the re-development of urban waste sites. Whilst this represents a relatively small area, these neglected areas often provide valuable habitats for colonising plant and animal species, including some reptiles and amphibians. Such areas may form a valuable refuge for wildlife in the built and often heavily manicured urban environment.

2.4 Summary

The Borough of Stevenage contains a fair cross section of the wildlife habitats present within Hertfordshire. Although there is no heathland and little chalk or acid grassland, Stevenage does possess a fair amount of woodland and grassland habitats, with some lakes, streams and ponds, plus a considerable 'urban' resource, of amenity grassland, gardens, allotments and buildings.

A total of 40 County Wildlife Sites* have been identified, including valuable locations for key species such as bats, Great Crested Newts, Badgers and scarce flora. As a large percentage of the open space in Stevenage is controlled by SBC, there exists a real opportunity for the council to implement a local Biodiversity Action Plan within the Borough, the first in the county.

The following sections evaluate key habitats in the Borough of Stevenage and identify those that could be improved through the implementation of Habitat Action Plans.

*A site not qualifying as of national importance for the wildlife it contains i.e. a Site of Special Scientific Interest (SSSI) but regarded to be of local importance for wildlife, its importance being merited in a parish, district, borough or county context. **Please note that the Stevenage Wildlife Sites are not numbered consecutively.**

3. GRASSLANDS HABITAT ACTION PLAN

3.1 General

Hay meadows and flower-rich pastures provide a breeding and feeding habitat for many species of bird, including finches, buntings and birds of prey, small mammals such as mice, voles and shrews and beetles, spiders and butterflies, amongst other invertebrates. They are also one of the most beloved aspects of the traditional English landscape. They have inspired many writers and painters and are one of the typical images of the rural idyll etched in the English psyche. They are therefore highly valued for their aesthetic appeal. In addition, these meadows and pastures contain a rich array of plants, including many scarce species.

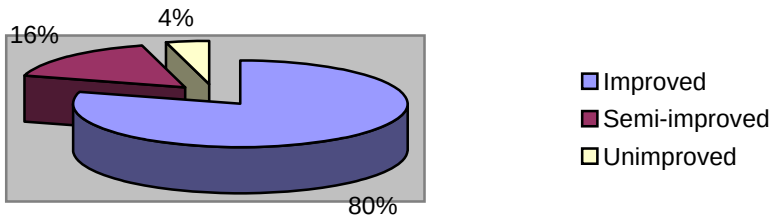
Lowland semi-natural grasslands have long been recognised as a resource of high nature conservation value. They contain a high proportion of plant species native to the UK and many of the grassland types occurring on neutral and base-rich soils, such as are found in Stevenage, support a particularly good diversity, including some rare plants and invertebrates. Some calcareous or ‘chalk’ grasslands may have up to 50 plant species per square metre!

Semi-natural grasslands are defined as plant communities where a high proportion of the vegetation consists of a mixture of native grasses and herbs where woody shrubs are largely absent and where vegetation height is usually less than one metre. Importantly, the species composition of these grasslands has not been substantially modified by intensive cultivation or the regular use of inorganic fertilisers.

Many of the sites, along with potentially important grassland areas in the Borough are owned or managed by Stevenage Borough Council, with others controlled by Hertfordshire County Council and Herts and Middlesex Wildlife Trust. This high percentage of habitat area managed by organisations with a commitment to biodiversity offers high potential for this local Biodiversity Action Plan to influence positively the majority of the grassland sites of conservation importance in the Borough.

In Stevenage Borough, grassland habitats of all types cover an area of 446.9 ha accounting for 17.2% of the Borough, somewhat less than the county figure of 21.3% for this habitat type.

Grassland in Stevenage Borough



A total of 355.3 ha (80%) of all grassland has been substantially “improved” for agriculture or amenity use, through the application of fertilisers and herbicides. A further 72.5 ha (16%) is semi-improved but still remains some wildlife interest. This includes 62.5 ha of neutral grassland, 9.2 ha of acidic grassland and 0.8 ha of calcareous grassland. Only 19.1 ha (4%) remains unimproved and of high ecological value, a figure surprisingly close to the county average of 4.3% given the urban nature of the Borough. This comprises 10.2 ha of neutral, 6.6 ha of acidic and 2.3 ha of marshy grassland. All unimproved grasslands are selected as County Wildlife Sites in recognition of their ecological importance.

3.2 Overall Objectives

To conserve, link and diversify the composition and structure of Stevenage’s grasslands to optimise their value to wildlife and people.

Stevenage Borough contains a significant amount of both unimproved and semi-improved grassland. Unimproved grassland, where the habitat has only been “improved” to a minimal degree for instance by cattle manure, is particularly important as it supports a wide range of plants, some of which are scarce or rare.

The major threat to these sites is natural succession to scrub and eventually woodland, leading to a loss of the rarer grassland habitats through shading and drying. The management of these sites therefore requires the introduction

of a management regime to prevent domination by scrub, thereby allowing the flowers and grasses to flourish.

Semi-improved grasslands have usually been treated with low doses of herbicide and inorganic fertiliser. They retain some of the species associated with unimproved grassland, though they are likely to have lost the more specialised and rarer species. Restoration to a more species-rich sward is possible in the medium term, though it will depend on the nutrient levels in the soil, the proximity of seed sources and probably most importantly the reinstatement of an appropriate management regime. Restoration of semi-improved grasslands to a more species-rich sward would have particular benefits where these are adjacent to existing unimproved sites, as a larger area of grassland would allow larger populations of insects, mammals and birds to use the habitat and may allow the spread of scarce species.

Existing public open spaces could provide a more scenic and natural environment with the development of a wildlife-friendly management regime. Fairlands Valley Park, forming the largest open space within Stevenage, has substantial wildlife potential, which could be realised with an appropriate regime. Currently the uniform profile of the lakes and gang mowing of surrounding grassland up to the waterside provides little in the way of habitats to support the plant or animal life traditionally associated with large water bodies. Less frequent cutting of the sward to create diversity of structure would encourage a variety of invertebrate and plant species with the more botanically diverse areas ideally being managed in a traditional hay-cut style.

This regime could also be extended to the long and wide grassland roadside verges of Stevenage Borough, which are mown regularly in the interests of tidiness and road safety. Clearly, road safety is of paramount importance and verges need to be kept short on a bend in the road or where tall grass could restrict visibility. However, on straight sections of road or on gentle bends, which probably accounts for the vast majority of cases, safety is not an issue. There is a real opportunity to increase biodiversity by allowing selected verges to grow into hay meadows during the summer months, providing habitat for insects including grasshoppers, crickets and butterflies, small mammals and birds.

However, it must be recognised that the lack of mowing in public open spaces and along roadside verges will initially be viewed by the general public as dereliction of duty or lowering of standards by SBC. Therefore, any such initiatives must be accompanied by a programme of education to explain the rationale behind the action and the expected benefits to wildlife. In the case of open spaces such as Fairlands Valley Park it would be possible to demonstrate the improvement to wildlife biodiversity to the public through guided walks.

3.3 Wildlife Sites

Of the 40 Wildlife Sites in the Borough, 13 are grassland or incorporate some grassland (see Table 3.1). Of these 13 sites, one is acidic, eight are neutral, one is chalk and one is neutral /acid and for two the information is confidential.

TABLE 3.1

GRASSLAND WILDLIFE SITES WITHIN STEVENAGE BOROUGH

WILDLIFE SITE REF.	NAME OF SITE	SITE AREA (ha)	DESCRIPTION
21/021	Fishers Green Meadow	0.52	Field immediately south of the Fishers Green pub consisting of rough neutral grassland with few signs of agricultural improvement. The field is surrounded by an old hedgerow including Hawthorn with Oak standards.
21/022	Symonds Green	1.12	An old village green now closely surrounded by housing development, crossed by a small road and footpath. The green consists of an area of unimproved rough acidic grassland with a wet ditch. The wetter area in the centre has a range of rushes, flote grasses and other wetland plants. Further habitat diversity is provided by the pond. The green is surrounded by old hedges including Hawthorn, Holly, Oak and Ash.
21/025	St Nicholas Churchyard	1.92	Churchyard with varied botanical interest supporting species rich neutral grassland over chalk with hedgerows and trees. The grassland includes a population of Meadow Saxifrage, which has also been recorded along the road verge.
21/026	A1072, Martin's Way	1.07	Experimental area to establish chalk grassland flora along chalk cutting of road. Chalk grassland has successfully spread with some species colonising naturally. A range of invertebrates has also become established. In Stevenage this is the only large site with chalk grassland flora. A total of 15 grassland indicator species are present, the majority being calcareous.
29/020	Garston Meadow		Information confidential
29/022	Norton Green		Information confidential

29/041	Shackledell Grassland, Fairlands Valley Park	1.43	An ancient unimproved grassland site at the eastern edge of the Fairlands Valley Park adjacent to Shackleton Spring Wood. A number of grassland herb species have been recorded including Agrimony. A stream runs along the grassland edge and there is an old hedge around the margins. It is the only site in Hertfordshire where the rare Great Green Bush-cricket is found.
29/042	Six Hills Common	0.73	Burial grounds in the middle of Stevenage supporting close mown neutral/acid grassland of considerable age. The plant species include indicators of unimproved grassland and some county scarce plants.
29/059	Triangular Grassland by Fairlands Valley Park	0.79	A triangular area of unimproved grassland becoming rank with scattered scrub. There is a good mix of neutral grass and herb species present.
29/065	Elder Way Flood Meadows	3.03	Meadows with semi-improved neutral grassland subject to occasional inundation. The flora includes common herbs of rough grassland and a number of indicator species of old long-standing grassland including Cowslips and Yellow Rattle.
30/005	Stevenage Brook Marsh	5.87	Grassland areas either side of the Stevenage Brook now surrounded by housing. The grassland communities are mainly semi-improved neutral grassland with relic areas of marshy grassland and swamp vegetation from the former wet meadows. The chalk brook and the marsh form a diverse habitat of value to invertebrate and avian species. This site forms the only large wet grassland in the Borough.
30/009	Poplars Meadow and Pond, Gresley Way Meadow	1.95	Remnant of an ancient hay meadow, with an old pond to the south. The meadow supports a diverse ground flora with 16 grassland indicator species including Dropwort. The ecological diversity is enhanced by the broad enclosing hedgerows of Blackthorn scrub with mature Oak stands and the ancient spring-fed pond supporting a wide range of aquatic and wetland plants.
30/052	Elm Green Pastures	3.61	Pastures of semi-improved neutral grassland with substantial hedgerows. The grassland supports a good diversity of common grassland herbs and includes marshy depressions supporting rushes.

It is recommended that SBC include appropriate policies within the Local Development Framework (LDF) and other strategic documents to protect all grassland Wildlife Sites from damage through development.

HABITAT ACTION G1

11 sites were visited during the preparation of this Plan. The sites not visited were Garston Meadow and Norton Green due to their confidential nature.

Of the 11 sites visited it was considered that no immediate action was required on the following three sites:

i. Symonds Green
ii. St Nicolas Churchyard
iii. Triangular Grassland by Fairlands Valley Park
iv. Elm Green Pastures

The action recommended for the remaining sites is as follows:

Fishers Green Meadow

Fishers Green Meadow is a small area of unmown grassland bordered by bramble, providing good habitat for insects, small mammals and foraging birds. The primary threat to the habitat is that the bramble will slowly encroach and eventually take over the whole site. It is therefore recommended that each year the bramble be cut back to an agreed line.

HABITAT ACTION G2

Martins Way

Martins Way is chalk grassland. The key area is south facing, with bare patches and anthills, all good conditions for local specialist butterfly species such as Common Blue, Small Copper and Small Heath. The idea of opening up the bank towards the eastern end could be considered but care must be taken to ensure sheltered areas and microclimates are retained. The banks need to be mown annually to prevent succession to scrub and the agreed mowing regime for the site should therefore be included in a Stevenage Borough Grassland Mowing Plan.

HABITAT ACTION G3

Shackledell Grassland

Shackledell Grassland is arguably the most important Wildlife Site in Stevenage Borough. Despite being only 1.43 ha, it is the only site in Hertfordshire where the Great Green Bush-cricket is recorded. In addition, six out of the 10 county species of cricket can be seen here. It is vital that not only should the site be managed to prevent the inevitable degeneration into scrub, but consideration should also be given to increasing the grassland habitat to reduce the potential for local extinctions.

The Great Green Bush-cricket requires a combination of grassland and scrub, as currently found at Shackledell Grassland. However, the scrub is showing signs of serious encroachment and without annual management will soon overtake this small compartment of grassland, leading to a loss of the grassland and hence grasshopper habitat.

The first action is to remove scrub annually to an agreed line. This will not only control the spread of the scrub but will also encourage the spread of the grassland. An aerial photo shows how much the scrub has already invaded. Consideration should also be given to the removal of scrub from adjacent areas to increase the area of habitat for grasshoppers and bush crickets.

HABITAT ACTION G4

The second action is to agree a mowing regime for the grassland and incorporate it into the Stevenage Borough Grassland Mowing Plan.

HABITAT ACTION G5

The third recommended action is to expand this important habitat. The concept is to provide additional grassland on Fairland Valley Park (see Section 3.4.2 and habitat Action G12) and to cut a corridor through the scrub on the western and northern boundaries of Shackledell Grassland to link the new areas of grassland.

HABITAT ACTION G6

The fourth opportunity is to designate and market Shackledell Grassland as a Grasshopper Sanctuary and incorporate it within a 'Grasshopper Discovery Trail, the first in the UK. It is suggested that the one kilometre trail should begin at the southern Fairlands car park and provide a circular route with interpretation, linking with the adjacent Whomerly Woodland Discovery Trail (see Woodlands Habitat Action Plan).

HABITAT ACTION G7

Six Hills Common

These six burial mounds are neutral/acid grassland of considerable age and support a number of plants scarce in Hertfordshire. There is also a good stand of relatively healthy elm adjacent to the site that could support the White-letter Hairstreak butterfly. Unfortunately the area is normally mown on a regular basis and therefore the plants are not given a chance to flower and set seed. The action is to agree a more appropriate mowing regime for the Common and incorporate it into the Stevenage Borough Grassland Mowing Plan.

HABITAT ACTION G8

Elder Way Flood Meadows

Elder Way Flood Meadows is an area of rough grassland sandwiched between the Roaring Meg Retail Park and North Herts College, and should support a good butterfly population. There is no immediate action required as far as the habitat is concerned. However, its proximity to the Retail Park results in a vast amount of litter collecting on the site and currently the site has the appearance of wasteland rather than a Wildlife Site. It is recommended that the site be cleared on a regular basis. This will make the site looked cared for and reduce the perception of the area as waste ground which will help reduce deleterious activities.

HABITAT ACTION G9

Stevenage Brook Marsh

Stevenage Brook Marsh is an attractive area of tall grassland, bisected by Stevenage Brook itself. The Brook is a chalk stream, one of the rarest habitats in the county and at risk to drying out due to over-abstraction. The marsh is particularly important as it provides a wildlife corridor from Knebworth Park to Stevenage Golf Centre. The brook is in good condition and has a thriving community of small fish. Unfortunately, on the area to the south of the brook there appears to be evidence of some recent tree planting. Whilst worthy, planting into this grassland habitat is inappropriate and will in the long term have a negative affect on the habitats. It is recommended therefore that the trees are moved to a more appropriate location and scrub be removed on an annual basis.

HABITAT ACTION G10

There is also a small amount of rubbish in the brook. From experience elsewhere it has been observed that areas that are littered collect more litter as they appear to be abandoned. If an area has no litter, people are less likely to be the first to leave their own litter. Accordingly, it is recommended that rubbish be removed from Stevenage Brook on a regular basis, emphasising the special care for this very rare habitat.

HABITAT ACTION G11

Poplars Meadow and Pond

Poplars Meadow and Pond is an area of ancient hay meadow next to Gresley Way. The area is bordered along its eastern boundary by a band of scrub although this seems to be currently in check and no action is required. At the southern end of the site, behind Sainsburys, there is a small pond with marginal, floating and submerged vegetation and has high potential for nature conservation. Unfortunately, at the time of survey it was full of litter including a shopping trolley and is an eyesore. This is not helped by the large amount of plastic bags both on the site and in the trees that have been blown from the superstore.

The required action is to clear the litter from the pond and the surrounding area. It is recommended that the local community be encouraged to be involved in the future management of the pond – namely, be responsible for collecting litter from the pond and surrounding area in future.

See Habitat Action We17

3.4 Non-designated sites with Improvement Potential

3.4.1 General

As stated in Section 3.1 the County Grassland Wildlife Sites are unimproved grasslands that have been selected in recognition of their ecological importance. However, there are also some substantial areas of improved or semi-improved grassland in the Borough, which if managed effectively, could increase biodiversity. These fall into three groups:

i. Green Spaces
ii. Road-side verges
iii. Golf Courses

3.4.2 Green Spaces

“Green open space is a vital component in creating and maintaining a balanced urban environment and is increasingly recognised as an essential “quality of life” resource.

Green space provides a number of functions and benefits within the urban fabric of our towns and cities and offers significant opportunities to develop and enhance the social, recreational, physical and mental health, educational and economic well-being of our community.”

Draft Green Space Strategy July 2008

Green open space in Stevenage Borough includes both sporting facilities such as football pitches and golf courses as well as parkland. Clearly football pitches and golf courses have been designed to meet specific requirements and therefore there is little or no scope to modify the management regime of these facilities to increase biodiversity. This is also the case with some of the smaller areas of parkland that are just large enough to allow leisure activities to take place. However, large areas of parkland can provide more than enough space for leisure activities such as walking, sport and kite-flying whilst also providing an opportunity to improve the site for wildlife. Fairlands Valley Park is a prime example.

Fairlands Valley Park can be split into three sectors. The sector to the north of the main lake is a series of ponds that are considered in more detail in Section 5, Wetlands. The centre section is the main lake itself that is a purpose-built facility with little or no scope for increasing biodiversity. However, the southern sector is a 20 ha area of closely mown improved grassland which is worthy of consideration for some measure of biodiversification.

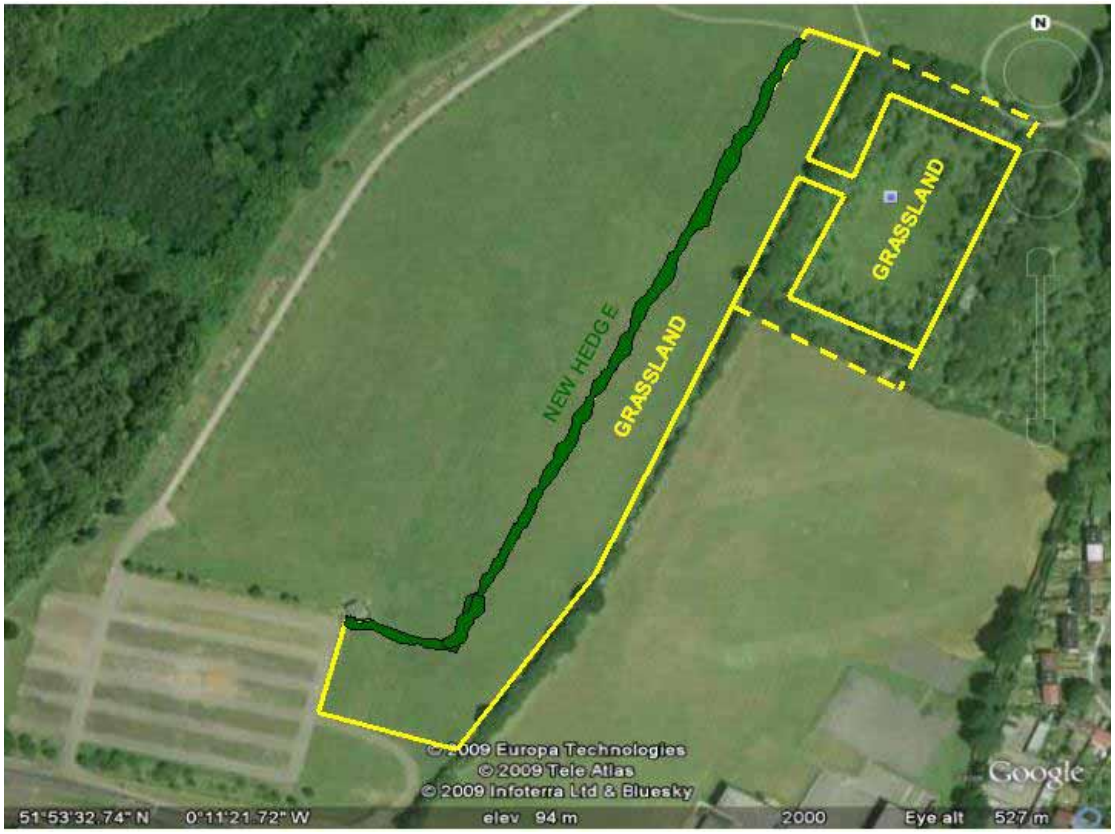
The primary use of this southern sector is:

i. Dog walking
ii. Jogging
iii. Kite flying
iv. Picnics
v. Family sports eg Frisbee, rounders
vi. Fairground
vii. Circus
viii. Horse shows
ix. Car shows

With an area of 20 ha it should be possible to set aside an area of grassland for biodiversity improvement without compromising the space required for the above activities.

At the current time the whole of the grassland is closely mown on a regular basis, with the exception of Shackledell Grassland that is a designated Wildlife Site with particular importance because of the presence of the Great Green Bush-cricket.

The concept, illustrated below, is to create a hay meadow linked to Shackledell Grassland, to attract a wide range of insects particularly butterflies and to encourage the spread of the Great Green Bush-cricket.



The recommended action is to:

i. Set aside a broad band of hay meadow stretching from the car park to the south, to the footpath north of Shackledell Grassland.

HABITAT ACTION G12

ii. Plant a hedge of Hawthorn, Blackthorn and Buckthorn along the western boundary of the hay meadow to provide shelter to the site from the prevailing westerly wind, which will benefit the grasshopper fauna.

HABITAT ACTION G13

iii. Cut a corridor through the scrub on the western boundary of Shackledell Grassland to link to the new area of hay meadow (See Section 3.3 and Habitat Action G6).

iv. Allow the new area of hay meadow to grow naturally during the Spring and Summer and do not cut until Autumn when any flowers would have seeded. Not all the meadow should be cut at once, always leaving a proportion of uncut grassland as habitat for those grasshoppers that lay eggs into grass stems. Include the agreed mowing regime for the site in the Stevenage Borough Mowing Plan.

HABITAT ACTION G14

v. Monitor the new hay meadow area in the first year and during subsequent years for the key indicator species:

a. Great Green Bush-cricket
b. Marbled White butterfly
c. Large Skipper butterfly
d. Small/Essex Skipper butterflies

HABITAT ACTION G15

There is opportunity to create a Grasshopper Discovery Trail, the first in the UK. The trail would start at the car park to the south of the site and follow a meandering path cut through the new hay meadow to Shackledell Grassland. Waymarks and appropriate Interpretation boards could be positioned along the route.

HABITAT ACTION G16

Assess new hay meadow in year three and if too dense, inoculate with Yellow Rattle by removing metre-square turves, scattering seed and raking or treading into the soil.

HABITAT ACTION G17

In addition to setting aside a broad band of hay meadow stretching from the car park to the south to the footpath north of Shackledell Grassland, it is recommended that the hay meadow be extended along the entire eastern boundary of the park, past the lakes, and right up to the northern end of Fairlands. This will provide continuity of habitat and facilitate the spread of invertebrates throughout the park. Where possible the band should be 10m wide but narrowing down where necessary.

HABITAT ACTION G18

Allow the new area of hay meadow to grow naturally during the Spring and Summer and do not cut until Autumn when any flowers would have seeded. Not all the meadow should be cut at once, always leaving a proportion of uncut grassland as habitat for those grasshoppers that lay eggs into grass stems. Include the agreed mowing regime for the site in the Stevenage Borough Mowing Plan.

HABITAT ACTION G19

Assess the extended hay meadow in year three and if too dense, inoculate with Yellow Rattle by removing metre-square turfs, scattering seed and raking or treading into the soil.

HABITAT ACTION G20

3.4.3 Roadside Grass Verges

Stevenage Borough has a number of long and sometimes wide roadside grass verges. These verges are traditionally mown several times a year for safety reasons and to present a tidy appearance. Clearly, road safety is of paramount importance and verges need to be kept short on a bend in the road or where tall grass could restrict visibility. However, on straight sections of road or on gentle bends, which probably accounts for the vast majority of cases, safety is not an issue.

There is, therefore, an opportunity to increase biodiversity by allowing selected verges to grow into meadows during the summer months, providing habitat for insects including grasshoppers, crickets and butterflies, small mammals and birds. Many grass verges within Stevenage Borough are of nutrient-poor subsoil and therefore there is also the possibility that some scarce plants could become established. For those that are dense Rye-grass monocultures, inoculation with Yellow Rattle is an option.

There is also scope for conservation-minded cutting regimes for a good number of flower-rich roadside banks throughout the new town. For example, not only the Martin's Way banks (which have become sadly rather scrubbed up), but also banks around the major road junctions at Fairlands Valley/Lytton Way, Gunnells Wood Road etc. For advice on these banks consult the Flora County Recorder.

The required action is to:

i. Consider the opportunities for managing some grass verges as meadows. If found to be deliverable the following subsequent actions will be required.

HABITAT ACTION G21

ii. Agree a mowing regime for each verge and include in the Stevenage Borough Grassland Mowing Plan.

HABITAT ACTION G22

iii. Monitor each of the verges in the first year and during subsequent years for the key indicator species:

a. Meadow Brown butterfly
b. Large Skipper butterfly
c. Small/Essex Skipper butterfly

HABITAT ACTION G23

iv. Carry out a biannual flora survey on each of the grass verges.

HABITAT ACTION G24

If successful and acceptable to Highways, in year three, assess opportunities for further verge meadow creation.

HABITAT ACTION G25

3.4.4 Golf Courses

Stevenage Golf Course and its surroundings provide a significant area of grassland. Clearly, the vast majority of the area is the golf course itself, with well-managed fairways and greens. At the moment the mowing regime is extended right up to the boundary hedges, leaving little or no long grass and a corresponding lack of opportunity for plants to flower.

A diverse mixture of grass and flower species combined with a variety of vegetative structure provides an attractive habitat a variety of invertebrates, including butterflies, grasshoppers and crickets, all of which are part of the wider food chain. It is considered that it may be possible to widen the areas of long grass around the margins by up to 2 metres without any detrimental effect to the golf course itself. Also, at the corners of the boundaries, by mowing across the corner instead of into the corner, would provide pockets of tall grassland.

There is also scope for extending the amount of long grass along the tree lines between the fairways.

HABITAT ACTION G26

It is recommended that an annual Mowing Plan be agreed between the Site Managers and Herts and Middlesex Wildlife Trust (HMWT) to increase the area of tall grassland. The plan will need to take account of the golfers' needs.

HABITAT ACTION G27

Implement the mowing plan. Markers may be needed at the start of the season to identify those areas that should not be mown.

3.5 Local Nature Reserves

Local Nature Reserves (LNRs) are for both people and wildlife. They are places with wildlife or geological features that are of special interest locally and offer people special opportunities to study or learn about nature or simply enjoy it.

Natural England recommends that LNRs should be:

a. greater than 2ha in size
b. capable of being managed with the conservation of nature and/or the maintenance of special opportunities for study, research or enjoyment of nature as the priority concern

and also be either:

c. of high natural interest in the local context or
d. of some reasonable interest and of high value in the local context for formal education or research or
e. of some reasonable natural interest and of high value in the local context for the informal enjoyment of nature by the public

HABITAT ACTION G28

It is recommended that that all the grassland sites listed above are assessed to determine if any are eligible for designation as a Local Nature Reserve.

3.6 Grasslands Habitat Action Plan

The Grasslands Habitat Action Plan is shown in Table 3.2.

TABLE 3.2

GRASSLANDS HABITAT ACTION PLAN

Action No.	Site	Action	By Whom (TBA)	By When	Success Criteria
G1	All Grassland Wildlife Sites	Include policies to protect Wildife Sites within the Local Development Framework and other strategic plans	SBC	Publication of Local Development Framework	Appropriate policies published
G2	Fishers Green Meadow	Cut back bramble to an agreed line.	SBC	Annually	Before and after photos
G3	Martins Way	Include the agreed mowing regime for the site in the Stevenage Borough Grassland Mowing Plan.	SBC	December 2010	Grassland Mowing Plan issued
G4	Shackledell Grassland	Cut back perimeter scrub to an agreed line.	SBC	Annually	Before and after photos
G5	Shackledell Grassland	Include the agreed mowing regime for the site in the Stevenage Borough Grassland Mowing Plan.	SBC	December 2010	Grassland Mowing Plan issued
G6	Shackledell Grassland	Cut a corridor through the scrub on the western boundary to link to a new area of grassland on Fairlands Valley Park (see Section 3.4.2 and Habitat Action G12)	SBC	December 2011	Before and after photos

G7	Shackledell Grassland	Designate Shackledell Grassland as a Grasshopper Sanctuary and create a Grasshopper Discovery Trail.	SBC	May 2013	Sanctuary Opened
G8	Six Hills Common	Include the agreed mowing regime for the site in the Stevenage Borough Grassland Mowing Plan	SBC	December 2010	Grassland Mowing Plan issued
G9	Elder Way Flood Meadows	Clear litter from the site	Site Owner	Annually	Before and after photos
G10	Stevenage Brook Marsh	Remove scrub from grassland	SBC	Annually	Before and after photos
G11	Stevenage Brook Marsh	Clear rubbish from brook	SBC	Annually	Before and after photos
G12	Fairlands Valley Park	Set aside a broad band of grassland for conversion into hay meadow, stretching from north to south.	SBC	December 2011	Site Plan Prepared
G13	Fairlands Valley Park Southern Sector	Plant a hedge of Hawthorn, Blackthorn and Buckthorn along the western boundary of the hay meadow to provide shelter to the site from the prevailing westerly wind.	SBC	December 2011	Before and After Photos
G14	Fairlands Valley Park Southern Sector	Include the agreed mowing regime for the new hay meadow in the Stevenage Borough Grassland Mowing Plan.	SBC	December 2011	Grassland Mowing Plan issued

G15	Fairlands Valley Park Southern Sector	Monitor the new hay meadow area in the first year and then biannually for the key indicator species.	SBC	Biannually	Results Issued
G16	Fairlands Valley Park Southern Sector	Set up a Grasshopper Trail from the car park to Shackledell Grassland.	SBC	May 2013	Trail Opened
G17	Fairlands Valley Park Southern Sector	Assess new hay meadow in year three and if too dense, inoculate with Yellow Rattle.	SBC	2014	Photos
G18	Fairlands Valley Park Southern Sector	Extend the hay meadow band along the entire eastern boundary, past the lakes, and right up to the northern end of Fairlands.	SBC	December 2012	Site Plan Prepared
G19	Fairlands Valley Park Southern Sector	Include the agreed mowing regime for the extended hay meadow in the Stevenage Borough Grassland Mowing Plan.	SBC	December 2012	Grassland Mowing Plan issued
G20	Fairlands Valley Park Southern Sector	Assess extended hay meadow in year three and if too dense, inoculate with Yellow Rattle.	SBC	2015	Photos
G21	Roadside Grass Verges	Consider opportunities for some grass verges in the Borough for conversion into hay meadow habitat.	SBC	December 2010	Selection Published

G22	Roadside Grass Verges	Agree a mowing regime for each verge and include in the Stevenage Borough Grassland Mowing Plan.	SBC	December 2011	Grassland Mowing Plan Issued
G23	Roadside Grass Verges	Monitor each of the verges in the first year and then biannually for the key indicator species.	SBC	Biannually	Results Issued
G24	Roadside Grass Verges	Carry out a flora survey on each of the grass verges.	SBC	Biannually	Results Issued
G25	Roadside Grass Verges	Assess success in year 3 and identify further areas for verge meadows	SBC	2014	Grassland Mowing Plan Updated
G26	Stevenage Golf Course	Site Managers and HMWT to consider a Mowing Plan to increase the area of natural grassland without detracting from the requirements of the golf course.	Site Managers/HMWT	December 2010	Mowing Plan Issued
G27	Stevenage Golf Course	Implement Mowing Plan	Site Managers	Annually	Before and After Photos
G28	All	Assess all grassland sites to determine if any are eligible for designation as a Local Nature Reserve	SBC	December 2010	Issue recommendations

4. WOODLANDS HABITAT ACTION PLAN

4.1 General

Woodlands, as the natural vegetation cover of most of the UK, are our richest wildlife habitats. They often contain the greatest numbers, as well as many of our rarest and most threatened species. Woodlands are important for most forms of wildlife, from trees and shrubs to mosses, lichens and fungi, and from mammals and birds to beetles, slugs and moths.

Woodlands are an important element in the natural environment of the Borough of Stevenage. They provide opportunities for recreation, are a valued component of the landscape, an essential habitat for wildlife, provide employment and are an effective means of absorbing carbon dioxide from the atmosphere. Many woodland blocks in Stevenage are identified as being 'ancient woodland' (that which has been in existence since at least 1600) and are described as 'semi-natural' because the woodlands have received past management. These represent the most important woodland habitats for wildlife, sometimes containing species of local and regional rarity. The majority of woods are comprised of broad-leaved species, although some elements of coniferous plantations exist.

The woodland type characteristically found in Stevenage is the Oak and Hornbeam stand type with Bluebell dominant in the ground flora. This woodland type has been identified as being internationally important in the EU Habitats Directive. Typical tree species found locally include Pedunculate and Sessile Oak, Hornbeam, Beech, Ash, Wild Cherry, Silver Birch, Alder and Willows. Locally found shrubs include Hazel, Field Maple, Hawthorn, Dogwood, and Holly. Additionally, in Stevenage, a range of planted exotic trees can be found in some woodland, including Corsican Pine, Western Hemlock and Western Red Cedar.

Important wildlife associated with Stevenage woodlands is diverse, including animals such as Badger, Fox, Hedgehog, Yellow-necked and Wood Mice, Pygmy Shrew, bats, and amphibians. Dormouse was previously recorded in Monk's and Whomerley Woods. Birds such as Green Woodpecker, Greater Spotted Woodpecker, Lesser Spotted Woodpecker, Treecreeper, Nuthatch, Song Thrush, Bullfinch, Marsh Tit and Tawny Owl can also be found in this habitat. A variety of invertebrates are also present, along with important fungi and epiphytes (mosses, liverworts and lichens).

A good diversity of woodland ground flora includes native Bluebell, Wood Anemone, Yellow Archangel, Sanicle and Wood Mellick. Past records of rarities include Bird's–nest and Early Purple Orchids, and Violet Helleborine.

In Stevenage, there exists around 130 hectares of woodland, which includes semi-natural broad-leaved, planted broad-leaved, planted coniferous, planted mixed woodlands and parkland. This represents around 5% of the Borough, somewhat lower than county and national averages. However, given the urban perception of Stevenage town, this is a considerable natural resource. Around 54 hectares is defined as 'ancient woodland' (from English Nature's

Ancient Woodland Inventory). Rather than comprising of a few relatively large woodlands, the Borough of Stevenage has many small woodland blocks. As a result, the woodlands exhibit a large ‘edge-effect’ – a large amount of edges, compared to their size. Whilst this may benefit feeding birds and bats, a large length of exposed edge mean that the woodlands are more affected by the adjacent land use. In many cases in Stevenage, adjacent land may have a negative effect on the land. For example, in a number of locations where houses back onto woodlands it was seen that the woods were used for dumping of garden and household waste.

4.2 Overall Objectives

To conserve Stevenage's woodlands and to develop and maintain an appropriate structure within the woodlands to optimise their value for wildlife and people.

Woodlands form the majority of the wildlife habitat in Stevenage Borough. Most of these woodlands, especially those designated as Wildlife Sites, are of ancient semi-natural woodland. Good quality ancient semi-natural woodland, not only contains a diverse mix of trees, shrubs, flowers and lower plants, but will also have a varied structure, with a mature canopy, areas of dense shrub layer and open glades or paths. A diverse structure provides more habitats for a wider range of species, including plants, birds and invertebrates.

A high quality ancient woodland will also have a large amount of both fallen and standing dead wood. These each provide habitat for their own wide-ranging community of saproxylic species (dead wood feeding and decomposing organisms) and allow the natural processes of decay and nutrient recycling to occur. Other important habitat features found in woodlands include streams and ponds, with those in woodlands often having their own unique assemblage of associated species and often retaining a relatively natural structure and hydrology.

Perhaps the largest threat to the woodlands of Stevenage Borough is their small size and isolation. Of the 22 woodland Wildlife Sites, 86% have an area of less than 5ha with 36% having an area of less than 1ha. The generally small woodland size and the isolation resulting from the loss of connections between semi-natural woodlands and grasslands in the wider countryside, has resulted in populations of characteristic woodland flora and fauna becoming confined to particular sites. Such isolation increases the chances of small populations becoming locally extinct, in response to local factors such as woodland management and population fluctuations or wider issues such as climate change as a result of global warming. Once extinct, they are then unlikely to recolonise from other sites.

A second threat is the lack of structure in many woodlands. This effect is often exacerbated in small woodlands, where all successional stages may not be represented continuously. The wide range of natural growth phases from open glades to over-mature woodland and dead wood typically found within natural forests is often missing in small woodlands. This may result in the loss of suitable habitat conditions for plants and animals with specialised requirements, which may then become locally extinct. The species which are most vulnerable to this threat are those less mobile species and those associated with open glades or old veteran trees and dead wood.

The overall objective is therefore to restore wildlife corridors between the woodland compartments and to maintain a diverse structure within the woodlands by leaving dead wood on the ground, dead wood standing where safety allows, coppicing and the selective opening up and maintenance of rides and glades.

4.3 Wildlife Sites

Of the 40 Wildlife Sites in the Borough, 23 are woodland sites (see Table 4.1).

TABLE 4.1

WOODLAND WILDLIFE SITES WITHIN STEVENAGE BOROUGH

WILDLIFE SITE REF.	NAME OF SITE	SITE AREA (ha)	DESCRIPTION
21/018	Margaret's Wood, Todd's Green *	3.84	Ancient semi-natural broad-leaved woodland with reasonable flora bisected by railway. The section south of railway is composed mainly of Hornbeam coppice with Oak and Hornbeam standards and some Hazel coppice. The section north of railway may have been formerly Oak over Hazel coppice but is currently densely overgrown with Blackthorn and Hawthorn scrub.
21/024	Whitney Wood	4.66	Ancient semi-natural woodland on the northern edge of Stevenage surrounded by urban development. It comprises a sizeable block of Oak/Hornbeam woodland that was formerly managed as coppice with standards. The stand is now Oak and tall Hornbeams with a scattered Hawthorn/Elder shrub layer. There are relic populations of several plants associated with old undisturbed woodland. Two large ponds add habitat diversity to the wood. A small southerly extension is linked to the main wood by a wide road verge of retained coppice. It includes a few large Oak standards and Hornbeam coppice. Subject to significant dumping of soil and rubble through the wood in March 2009.
21/047	Whitney Drive Wood	0.42	Small fragment of ancient semi-natural Hornbeam coppice woodland with large Oak standards. Formerly part of Whitney Wood. A diverse flora for a small wood includes a good number of ancient woodland indicator species.

21/048	Almond Spring	0.71	Fragment of ancient semi-natural Oak/Hornbeam woodland with Hornbeam, Cherry and Oak remnants mainly around the edges. The central area has been planted with Beech and some Pine. The ground flora is sparse but supports a small number of indicator species.
21/049	Fishers Green Wood	1.08	Pedunculate Oak-Hornbeam woodland, predominantly Hornbeam coppice with Oak, Ash and Cherry standards with some Field Maple coppice along the boundary. The ground flora is typical of ancient woodland with abundant Bluebells. There are remnants of banks on either side.
22/002	Sishes Wood	1.47	Ancient Oak/Hornbeam woodland with mainly mature Oak tree standards and sparse Hornbeam coppice. The Oaks are for the most part aligned in rows suggesting that the wood is an old plantation on an ancient woodland coppice site.
22/004	Martin's Wood	3.67	Mixed woodland with some ancient coppice in close proximity to housing estate. Former ancient Oak/Hornbeam coppice. Some Oak and Hornbeam standards remain but the wood has largely been replanted with Scots Pine and Beech. There is a Hornbeam hedge around the margin.
22/005	Wellfield Wood	4.76	Mixed plantation surrounded by housing and next to the new industrial area. Ancient semi-natural Oak/Hornbeam coppice woodland replanted with mainly Beech, Sycamore, Birch, Fir, Poplars and Field Maple. The ground flora supports typical ancient woodland indicators dominated by Bluebells and there is a ditch and hedge around the woodland boundaries.
22/041	Hanginghill Wood	0.97	Ancient semi-natural Oak/Hornbeam coppiced woodland fragment. The canopy is typically Cherry, Hornbeam, Ash and Oak with patches of young Beech. The sub canopy is mainly Hawthorn, Hazel and Elder with coppices of Hornbeam and Ash and several old rotting coppice stools. There is much dead wood and several fine old standards of Cherry and Hornbeam. The ground flora is typically Bluebells, Bramble and Cow Parsley but includes Sanicle and Wood Melick.
29/021	Watery Grove		Information confidential

29/034	Monk's Wood West	1.19	Thin strip of ancient semi-natural Oak/Hornbeam coppice woodland (originally part of Monk's Wood) located on the west side of Monkswood Way Road. The woodland supports plant species and a structure indicative of ancient woodland
29/038	Broadwater Marsh	0.78	A wet wood in an urban area with an undegraded spring in the corner supporting three fen indicator species including 10 clumps of Tussock Sedge.
29/039	Warren Springs *	0.31	A fragment of ancient semi-natural Oak/Hornbeam woodland adjacent to the old London Road. The woodland consists of overgrown Hornbeam coppice with a sparse under storey of Elder. There are a few Oak standards and some Cherry. At the south end there is some Field maple. The ground flora supports ancient woodland indicators including Bluebells and Dog Mercury. The site is locally important in that it contains the only site within Stevenage for Moschatel.
29/040	Monk's and Whomerley Woods	25.29	Ancient Oak/Hornbeam woodland on decalcified boulder clays containing a large moated site and other earthworks. The woodland comprises neglected Hornbeam coppice with scattered Pedunculate Oak, Ash and Field Maple with Hazel, Dogwood, Holly, and Guelder Rose in the shrub layer. The ground flora typically contains Bramble, Dog's Mercury, Bluebell and Wood Anenome. In recent years extensive areas have been converted to mixed, conifer and broad-leaved plantation. The ponds are inhabited by three amphibian species including Great Crested Newts. The varied animal life included Yellow-necked Mouse, Pygmy Shrew and past records of Common Dormouse.

30/002	Loves Wood	2.66	Small area of ancient semi-natural Oak/Hornbeam woodland on the west side of Shephall Way Road. A large part has been cleared and some Oak and Ash replanted. The southern section comprises a Silver Fir plantation with some regeneration of coppice. The wood supports a number of ancient woodland indicator species and once formed a larger woodland along with Ridlins Wood.
30/003	Ridlins Wood	7.22	Ridlins Wood is an ancient woodland site, which has been substantially replanted in the past. The stand type is Oak/Hornbeam with Ash and Field Maple. The semi-natural habitat survives as overgrown Hornbeam Coppice in patches between semi-mature plantation of Scots Pine and Larch. Some Beech is also present in the plantations. The ground flora supports a good range of ancient woodland indicators and Bird's-nest Orchid has been recorded.
30/028	Ashtree Wood and Abbotts Grove	7.75	Ancient semi-natural coppiced woodland composed of Hornbeam, Oak, Ash, Hazel, Cherry and Field Maple. The central areas have been replanted with species such as Beech, Cedar and Pine. The ground flora supports ancient woodland indicators with a greater diversity of species associated with the semi-natural canopy along the edges. Bluebells and Dog's Mercury are abundant. There are some boundary coppice stubs and small wood banks within the wood.
30/041	Marymead Spring	0.98	Wet deciduous Hornbeam/Alder woodland with spring sources surrounded by housing. The ground flora indicator species such as Bluebells and Wood Anemones. Wet woodland indicator species are also present.
30/043	Great Collens Wood	4.30	Ancient semi-natural broadleaf woodland replanted in places. The canopy is predominantly Hornbeam coppice with Ash, Cherry and Field Maple with a ground cover of Bramble, Bluebell and Dog's Mercury. The middle and southern sections have been replanted with Oak, Ash and Pine. Remnant standards and coppice can be found along the woodland edge in the replanted compartments.

30/045	Pestcotts Spring and Wood	3.12	Ancient semi-natural woodland substantially altered by blanket planting throughout the wood except at the very edges and to the far north. The main canopy supports planted Larch, Beech and some Cherry with occasional Hornbeam and Ash. The ground flora supports a number of ancient woodland indicators with Bluebells dominant in the Spring. The semi-natural canopy consists of Hornbeam coppice and standards plus some Ash standards and Cherry.
30/046	Blacknells Spring	0.63	Thin strip of scrubby, ancient semi-natural woodland with a canopy typically of Hornbeam, Ash, Field Maple and Hawthorn. The ground flora supports wood grasses, Bramble, Bluebell and Yellow Archangel.
30/047	Wiltshire's Spring	0.76	Small remnant of ancient semi-natural woodland with a canopy of old Hornbeam coppice with Ash, Field Maple, and Hawthorn. A section of the wood to the west has been under planted with Beech and Scots Pine. The ground flora supports wood grasses, Bramble, Bluebell and Yellow Archangel.
30/051	Valley Way Wood	2.67	Planted mixed woodland with Oak, Larch and scrub supporting a number of plant species and structural features indicative of ancient woodland. The ground flora is dominated by Bramble and Bluebells.

* Not owned by Stevenage Borough

It is recommended that SBC include appropriate policies within the Local Development Framework and other strategic documents to protect all woodland Wildlife Sites from damage through development.

HABITAT ACTION G1

Due to a limited amount of resource for conservation work in Stevenage, action for woodlands has been highly prioritised. With this in mind, of the 22 sites visited (Watery Grove not visited due to its confidential nature), it was considered that no immediate action was required on the following 15 sites:

i. Margaret's Wood, Todds Green
ii. Whitney Wood
iii. Whitney Drive Wood
iv. Almond Spring
v. Fishers Green Wood
vi. Wellfield Wood
vii. Hanginghill Wood
viii. Loves Wood
ix. Ridlins Wood
x. Ashtree Wood and Abbotts Grove
xi. Marymead Spring
xii. Great Collens Wood
xiii. Pestcotts Spring and Wood
xiv. Blacknells Spring
xv. Valley Way Wood

The actions recommended for the remaining 7 sites are as follows:

Sishes Wood

Sishes Wood is in fairly good condition, although there is a large amount of Holly and some Laurel which should be removed before it becomes too dominant.

HABITAT ACTION Wo2

Martin's Wood

As for Sishes Wood, Martins Wood is in good condition but has there is a large amount of Holly that should be removed before it becomes too dominant.

HABITAT ACTION Wo3

Monk's Wood West

Monk's Wood West is an attractive piece of woodland adjacent to the Roaring Meg Retail Park and is almost exclusively ancient Hornbeam coppice.
It is strongly recommended that the Hornbeam is re-coppiced over a five-year period. This is a task that could be carried out with the help of conservation volunteers.

HABITAT ACTION Wo4

There are some holes in the fence around the wood and these should be repaired to prevent Muntjac deer from eating the new coppice shoots.

HABITAT ACTION Wo5

Broadwater Marsh

Despite its name, Broadwater Marsh is a wood on a 25-degree slope.

In the northwest corner of the wood is a spring-fed marshy area that would benefit from the removal of a number of the saplings present.

HABITAT ACTION Wo6

Warren Springs

Warren Springs is a small triangular wood sandwiched between the B197 London Road adjacent to the Roaring Meg Retail Park and a business unit next to the railway. The site is important in that it is the only site in Stevenage Borough where Moschatel (pictured), a scarce Hertfordshire flower, can be found. Being sandwiched between a main road and a business unit the importance of the site is not evident and therefore the area should be fenced off to prevent misuse.

HABITAT ACTION Wo7

Monk's and Whomerley Woods

Monk's and Whomerley Wood is the largest (25.29ha) and finest example of Ancient Oak and Hornbeam woodland in Stevenage Borough. As for much other woodland in the Borough the wood is a mosaic of different planting densities, tree species and the characteristics of the undergrowth and there is significant potential for improving the woodland for a number of taxonomic groups.

There is an area in the southwest section that is suitable for opening up into a glade and linked by a ride to the two ponds. Also, further north and west there are rides that could be widened to encourage butterflies and plants. The recommended action is to agree a five-year conservation management plan with HMWT.

HABITAT ACTION Wo8

Whomerley and Monks Woods also exhibit the best features and habitats of the woods throughout Stevenage and as such they provide a wonderful opportunity for people to learn more about woods and their wildlife. These woods also lie in the heart of the town and adjacent to the popular Fairlands Valley Park. It is proposed that a Woodland Discovery Trail be established in the woods. This way marked trail should begin in the car park and take in all the main woodland habitats – rides, ponds, ditches, the ancient moat and ancient trees. The trail can be linked to the Grasshopper Discovery Trail at nearby Shackledell.

HABITAT ACTION Wo9

Wiltshire's Spring

Wiltshire's Spring is a small woodland to the south of the Fairland's Valley Boating Lake. Overall the wood is in very good condition but it is recommended that the saplings in the northwest sector should be thinned.

HABITAT ACTION Wo10

Litter and Fly Tipping

Many of the woods are used extensively by the public and can accumulate a considerable amount of litter. Also, those woods adjacent to housing estates are often subjected to fly tipping. All woods should be inspected each year and litter and fly tipping removed as necessary.

HABITAT ACTION Wo11

4.4 Non-designated Sites with Improvement Potential

There are no sites with improvement potential.

4.5 Local Nature Reserves

Local Nature Reserves (LNRs) are for both people and wildlife. They are places with wildlife or geological features that are of special interest locally and offer people special opportunities to study or learn about nature or simply enjoy it.

Natural England recommends that LNRs should be:

a. greater than 2ha in size
b. capable of being managed with the conservation of nature and/or the maintenance of special opportunities for study, research or enjoyment of nature as the priority concern

and also be either:

c. of high natural interest in the local context or
d. of some reasonable interest and of high value in the local context for formal education or research or
e. of some reasonable natural interest and of high value in the local context for the informal enjoyment of nature by the public

HABITAT ACTION Wo12

It is recommended that that all the woodland sites listed above are assessed to determine if any are eligible for designation as a Local Nature Reserve.

4.6 Woodlands Habitat Action Plan

The Woodlands Habitat Action Plan is shown in Table 4.2.

A grant application to secure funding for the actions listed in Table 4.2 will be submitted during 2010. The timing of the award may affect some of the action completion dates.

TABLE 4.2

WOODLANDS HABITAT ACTION PLAN

Action No.	Site	Action	By Whom (TBA)	By When	Success Criteria
Wo1	All Woodland Wildlife Sites	Include policies in Local Development Framework to ensure protection of woodland wildlife sites	SBC	Publication of Local Development Framework	Appropriate policies published
Wo2	Sishes Wood	Remove holly and laurel from wood	SBC	December 2010	Before and after photos
Wo3	Martin's Wood	Remove holly from wood	SBC	December 2010	Before and after photos
Wo4	Monk's Wood West	Re-coppice Hornbeam over a five year period	SBC	December 2015	Before and after photos
Wo5	Monk's Wood West	Repair fence	SBC	December 2010	Before and after photos
Wo6	Broadwater Marsh	Remove a number of saplings from the northwest corner	SBC	December 2010	Before and after photos
Wo7	Warren Springs	Fence off the wood	SBC	December 2010	Before and after photos
Wo8	Monk's and Whomerley Woods	Agree a five year management plan with HMWT	SBC	December 2010	Plan issued
Wo9	Monk's and Whomerley Woods	Create a Woodland Trail and link to the Shackledell Grasshopper Trail	SBC	May 2013	Trail Opened
Wo10	Wiltshire's Spring	Thin saplings in the northwest sector	SBC	December 2010	Before and after photos
Wo11	All woods	All woods should be inspected each year and litter and fly tipping removed as necessary.	SBC	Annually	Before and after photos
Wo12	All	Assess all woodland sites to determine if any are eligible for designation as a Local Nature Reserve	SBC	December 2010	Issue Recommendations

5. ANCIENT HEDGEROWS HABITAT ACTION PLAN

5.1 General

Hedgerows resemble woodland edge and scrub habitats. They exhibit a wide range of variation and the most important are rich in relic species of ancient woodland. Some of these will be remnants of the original woodland cover retained to mark a boundary when the surrounding woods were first cleared. The oldest may have existed for more than 1000 years. These older hedges will usually contain a greater number of shrubs and trees than recent plantings and will therefore be of greater wildlife value.

However, hedges of any age can be important if other wildlife habitats are scarce. Over 600 plants, 1500 insects, 65 birds and 20 mammal species are known to live or feed in hedgerows. Hedgerows provide a vital refuge for wildlife in urban areas and may also assist movement by linking woodlands and other semi-natural habitats.

Since 1945 there has been a drastic loss of hedgerows. Between 1984 and 1990 the net loss of hedgerow length in England was estimated at 21% (Countryside Survey 1990, DOE 1993). This loss was the result of a combination of outright removal (1.7% pa) and neglect (1.8% pa). Since 1990 the loss has continued, with neglect becoming increasingly important and removal less so. The current UK total, assuming a continued overall net loss of about 5% per annum may be estimated to be about 450,000 Km (*Biodiversity: The UK Steering Group Report*). The loss of hedges nationally, due to neglect, is also reflected in Stevenage. The lack of management is contributing to a moribund habitat of low vigour, poor health and reduced biodiversity.

A number of factors have led to these losses. The decline of mixed farming means that on many farms hedges have no function in stock management. Hedges have been removed to increase field size because of larger machinery or larger herd size. Wire fences have replaced hedges as stock-proof structures on many farms. Hedges that have lost their function have frequently either been neglected, and left to grow tall without structure, or conversely, hedges may be over-managed until they become a remnant line of short separated bushes.

The margins of hedgerows can often be of considerable importance particularly where they are derived from semi-natural grassland. Such margins may be rich in wildflowers and will add to the value of the hedge. For example, butterflies and moths whose caterpillars feed on the hedgerow shrubs need sources of nectar which can be provided by the ground flora.

5.2 Overall Objectives

To manage Stevenage's ancient hedgerows to produce a diverse structure and to ensure their survival for the benefit of wildlife and local residents.

The general perception of the design of a new town such as Stevenage is that of a large-scale housing development where some land is set aside for recreational facilities and the area made more environmentally friendly by the provision of grass verges and the planting of trees and shrubs along the streets. This provides an attractive living environment but, as the planting is of new stock, there is a lack of ancient woodland and hedgerows. This is not the case in Stevenage Borough.

During the planning and development of Stevenage much of the existing semi-natural woodland was retained, which is why the borough is so rich in this important habitat (see Section 4). Also, prior to the building of the new town, the area contained a number of country lanes lined with ancient hedgerows and these too were incorporated into the design and were used to provide pedestrian links from one part of the town to the other. These ancient hedgerows are still present today and many of the country lanes have now been designated as cycle ways and are well used by pedestrians and cyclists alike.

The ancient hedgerows are a mix of mature standards such as Oak, Ash, Hornbeam and Field Maple, many of which are ivy-covered, and mature more traditional hedgerow species such as Hawthorn, Blackthorn and Elder. There are several signs that these hedgerows have been coppiced in the past but not in recent times. The main issue is, therefore, how to manage the hedgerows for the future.

The mature standards are probably best left alone, although it may be necessary to coppice one or two to let in more light onto the ground below the hedge to encourage the growth of ground flora. One of the problems with coppicing some of these mature standards is that, due to previous coppicing, the stools are quite high off the ground and therefore further coppicing will be in excess of 1 metre off the ground, which in some instances is exacerbated

by the fact that the hedgerows are on a bank. The ivy should be left as this provides both food and nesting sites for birds and a source of nectar for butterflies.

The hedgerow species can either be managed by laying or coppicing and each hedge should be evaluated carefully on its own merits before deciding on which option to choose. In the past, many hedgerows were laid as this provided instant and robust stock fencing. However, this is inappropriate along what are now predominantly cycle ways and therefore the best option is to coppice, which will thicken the hedge and rejuvenate growth. This will produce thick luxuriant hedges with sunlight and occasional dappled shade from the retained mature standard trees, thereby increasing biodiversity and providing an attractive environment for both cyclists and pedestrians.

The main objectives are therefore to produce an inventory of all the ancient hedgerows in the borough and to develop a policy for their management, which meets the combined requirements of the future survival of the hedges, wildlife and residents alike.

5.3 Wildlife Sites

Of the 40 Wildlife Sites in Stevenage Borough, Kitching Green Lane is the only ancient hedgerow classified as a Wildlife Site (See Table 5.1).

It is recommended that SBC include appropriate policies within the Local Development Framework and other strategic documents to protect the Kitching Green Lane Wildlife Site from damage through development.

HABITAT ACTION AH1

The management of the site will be covered by the Habitat Action Plans detailed in Section 5.4.

TABLE 5.1

ANCIENT HEDGEROW WILDLIFE SITES WITHIN STEVENAGE BOROUGH

WILDLIFE SITE REF.	NAME OF SITE	SITE AREA (ha)	DESCRIPTION
29/018	Kitching Green Lane	0.19	Old Green Lane stretching from Upper Kitching Spring woodland to the north to Pigeonswick Wood in the south. The site includes the boundary around Burleigh Meadow. Old Hornbeam stubs found along the lane adjacent to the wood. The green lane supports a gappy hedge of Blackthorn, Elm, Hazel and Elder. Five spikes of the very rare parasitic Greater Broomrape have been recorded along the ditch at the west end of Burleigh Meadow The section of the green lane by Burleigh Meadow is part of the SSSI. Part of the site lies outside Stevenage Borough.

5.4 Non-designated Sites with Improvement Potential

As stated above, Stevenage Borough contains a number of ancient hedgerows along the pedestrian and cycle way links from one part of the town to the other. The first step, therefore is to conduct a survey of all the hedgerows, detailing their length, species content and condition to produce a comprehensive ancient hedgerow inventory.

HABITAT ACTION AH2

It is already known that out of all these ancient hedgerows only one, Kitching Green Lane, is designated as a Wildlife Site. The inventory should therefore be reviewed to see if any of the other ancient hedgerows meet the criteria for being designated as a Wildlife Site.

HABITAT ACTION AH3

As discussed in Section 5.2, there are a number of options for managing the mature standards and hedgerow species. Although it is likely that the management of each hedge will be considered on its own merit, a policy shall be developed and agreed on the general approach to the management of the hedgerows and an Ancient Hedgerow Management Plan issued.

HABITAT ACTION AH4

Implement the Ancient Hedgerow Management Plan.

HABITAT ACTION AH5

5.5 Ancient Hedgerows Habitat Action Plan

The Ancient Hedgerows Habitat Action Plan is shown in Table 5.2.

TABLE 5.2

ANCIENT HEDGEROW HABITAT ACTION PLAN

Action No.	Site	Action	By Whom (TBA)	By When (TBA)	Success Criteria
AH1	Kitching Green Lane Wildlife Site	Include appropriate policies in the Local Development Framework and other strategic documents to ensure protection.	SBC	Publication of Local Development Framework	Appropriate policies published.
AH2	Ancient Hedgerows	Prepare and issue an Ancient Hedgerow Inventory.	SBC	December 2010	Inventory issued.
AH3	Ancient Hedgerows	Review the inventory to see if any of the ancient hedgerows meet the criteria for being designated as a Wildlife Site.	SBC	June 2011	List of Wildlife Sites updated.
AH4	Ancient Hedgerows	Prepare and issue an Ancient Hedgerow Management Plan	SBC	December 2011	Management Plan issued.
AH5	Ancient Hedgerows	Implement Management Plan	SBC	Annually	Before and after photos.

6. WETLANDS HABITAT ACTION PLAN

6.1 General

The term ‘wetland’ covers a diverse range of habitats. Within Hertfordshire alone this includes rivers, streams, springs, watercress beds, ponds, lakes, reservoirs, sewage works, marshes, fens, swamps, wet grassland and carr woodland. These wetlands are hugely important for both wildlife and people.

Unfortunately in Stevenage Borough, the variety of wetland is fairly restricted comprising just ornamental lakes, ponds, springs, one swamp and streams.

Ornamental lakes account for by far the largest area of open water, being dominated by the five lakes in Fairlands Valley Park. This is a multi-use site, where nature conservation has to be considered alongside recreation and amenity uses.

There are also a number of ponds in the Borough, some of which are associated with grassland or woodland Wildlife Sites. However, many of these are at threat of being lost unless they are brought under appropriate management as a matter of urgency.

In Stevenage Borough as well as the rest of the UK, the loss of wetland habitats may to some extent be compensated for by the increase in garden ponds and without this resource, many of our aquatic species would be at greater risk. Garden ponds are therefore an important part of our wetland habitats and should be encouraged.

As far as flowing water is concerned, the largest natural watercourse in Stevenage is Stevenage Brook and its tributaries, running along the western half of the Borough. Aston End Brook extends along the eastern edge of the Borough. Both eventually enter the river Beane as they travel south into Hertfordshire. Due to their size and nature, both are prone to damage from pollution. The River Beane is a chalk stream and as such of international significance due to its special biodiversity. All of Hertfordshire’s chalk streams are under threat from over abstraction. Low flows are more susceptible to pollution as dilution is lessened.

However, many of the wetland habitats in Stevenage are rich in wildlife, supporting animals such as Great Crested Newt, Smooth Newt, Common Toad and Common Frog, along with many dragonflies, damselflies and other aquatic insects. A range of birds such as Kingfisher, Grey Heron, Grey Wagtail and Little Grebe can also be found on lakes, ponds and streams in the Borough, along with rare or scarce plants such as Water Violet, Fine-leaved Water Dropwort and Tussock Sedge. Additionally, several species of mammals use the wetland habitats, including various bats that have been recorded feeding over the lakes in Fairlands Valley Park.

6.2 Overall Objectives

To conserve and restore Stevenage's wetlands through appropriate and sensitive management to optimise their value to wildlife and people

The key issues on wetlands generally relate to either hydrology or management. Wetlands are now much reduced, fragmented and overall, drier. In the past drainage and direct destruction were the main problems. Nowadays water levels are still falling and a major concern is unsustainable abstraction of water. Wetlands have always been popular areas for human leisure and recreational activities. These pressures continue to increase and if unmanaged, pose a real threat to the biological integrity of many sites. The following issues are relevant to Stevenage's wetlands today.

Low water levels are the primary threat to all forms of wetland and there is a widespread feeling that all wetlands, from rivers to ponds, have never before been so short of water. Any long-term lowering of water levels in any wetland, or reduced incidence or duration of flooding, can cause severe losses in biodiversity and changes in community composition. Such problems are exacerbated during times of drought, such as in the 1990s when widely fluctuating annual rainfall led to drought conditions. Low flows or lowered water levels in ponds mean that pollution incidents are magnified because of a reduced dilution factor.

There is an inevitable process of natural succession to scrub and woodland as wetlands accumulate organic matter and dry out. This results in an overall loss of species, often scarce, especially if early successional stages are not regularly being re-created in compensation. Ponds and marshes are particularly vulnerable to rapid succession.

Pond management can frequently be well intentioned but ultimately damaging. By aiming for 'classical' but often over drastic management - varying bank profiles, removal of shade and complete de-silting, the valuable and differing features of ponds can be destroyed. It is crucial that the existing biodiversity of a pond is understood prior to making management decisions – 'look (long and hard) before you leap!'

Given the number and diversity of ponds within Stevenage, there is an opportunity to develop an 'adopt a pond' scheme whereby local communities or businesses take responsibility for caring for their local ponds with guidance and support from experienced advisors. Advisors would work with the community and businesses to agree and prepare a pond management plan. The plan would then be implemented by the adopters.

Whilst, water resource management has to be tackled nationally and regionally, residents of Stevenage have a part to play in conserving water. Water abstracted from Hertfordshire's chalk aquifers is pumped to the homes and businesses of the town. Reducing consumption in the town will clearly benefit rare habitats such as our chalk streams that depend on springs emanating from the aquifer. One of the main objectives in this wetlands plan should be to raise awareness of how our demand for water affects local wildlife habitats such as the River Beane and therefore encourage residents and businesses in Stevenage to use less water. In addition to saving water a prime objective should be to restore and preserve our valuable wetland resource by the application of sensitive management to achieve a balanced aquatic environment and to offset the effects of natural succession.

6.3 Wildlife Sites

Of the 40 Wildlife Sites in Stevenage Borough only Ridlins Mire and Barnwell School are classified as wetland sites (See Table 6.1). Ridlins Mire has no open water but is an ancient peat bog to the south of Ridlins Wood.

It is recommended that SBC include appropriate policies within the Local Development Framework and other strategic documents to protect the Wetland Wildlife Sites from damage through development.

HABITAT ACTION We1

TABLE 6.1

WETLAND WILDLIFE SITES WITHIN STEVENAGE BOROUGH

WILDLIFE SITE REF.	NAME OF SITE	SITE AREA (ha)	DESCRIPTION
30/004	Ridlins Mire	3.07	Ancient peat bog to the south of Ridlins Wood surrounded by roads. The spring line formed up the slope of the site at a sand/clay contact causes run-off down the slope. Impeded drainage from the underlying clay has resulted in the development of a rheophilous ombrogenous bog. At the north end of the site a small domed peat mire has accumulated, a habitat type found nowhere else in Hertfordshire. There is a good wetland flora and several unusual plants have been recorded. The site is also important for invertebrates including a national rarity.
30/070	Barnwell School	NA	Pond in school grounds important for amphibians.

There are no recommended actions for Ridlins Mire.

Barnwell School

This pond is of a reasonable size and is maintained in good condition by the school. Great Crested Newts are known to be present. It has a good selection of floating, emergent and marginal vegetation and the only element missing for a completely well balanced pond is submerged vegetation. The recommended action is therefore to introduce some native submerged vegetation.

HABITAT ACTION We2

6.4 Non-designated Sites with Improvement Potential

6.4.1 General

There are a number of wetland sites in Stevenage Borough, which although not designated Wildlife Sites, have significant potential for improvement to increase biodiversity. These fall into the following categories:

a. Parkland lakes
b. Large ponds
c. Garden ponds

6.4.2 Parkland Lakes

The most significant complex of parkland lakes is at Fairlands Valley Park. These lakes are a cascade of five lakes with water flowing from north to south. The most northerly lake (Balancing Lake) is a balancing lake that is designed to hold back storm water runoff for a short while to allow the settlement of the solids. Apart from during periods of rain, the lake holds little or no water and is a muddy hollow with no vegetation.

The most southerly of the five lakes (Main Lake) is a purpose-built boating lake with sloping concrete or grassy banks with limited potential for improvement. The three intermediate lakes, however, have considerable potential for habitat improvement consistent with the significant public usage and access.

FAIRLAND VALLEY PARK NO 2, ENVIRONMENT AND MILLENIUM LAKES

NO 2 LAKE

ENVIRONMENT LAKE

ENVIRONMENT LAKE

MILLENIUM LAKE

MILLENIUM LAKE

MILLENIUM LAKE

No 2 lake is a long thin lake with plastic piling banks and no vegetation and in its current state probably has little or no public amenity value. It would significantly benefit from the creation of more natural banks and the planting of a Phragmites reed bed. The latter would not only provide potential nesting habitat for several pairs of Reed Warbler but would also filter the water before it flows into the Environment Lake.

The western margin of the Environment Lake is also plastic piling and short grass. Here there is considerable scope for fencing off a 2-metre margin in the water for planting with emergent vegetation, which would provide an attractive habitat for dragonflies. This could be further enhanced by not cutting the grass bank until the autumn, apart from a narrow path though the resulting hay meadow to allow visitors to enjoy the butterflies and dragonflies present.

The Millenium Lake is a large lake with a high population of ducks and geese. Unfortunately, the combination of grazing by the waterfowl and the trampling by their feet make the grassy banks short and muddy. Clearly one of the attractions of this lake is for children and adults alike to feed the ducks, which requires access to the waters edge. There are, however, a number of purpose-built concreted areas for this purpose. Therefore, there is scope for fencing off some areas of the bank to allow the grass to recover and waterside vegetation to develop.

It is recommended that the management plans for these lakes be reviewed in the light of the recommendations of the Biodiversity Action Plan.

HABITAT ACTION We3

The Main Lake is a purpose-built sailing lake and is also used for angling. There are no islands on the lake and the edge of the lake is exclusively gently sloping concrete or grassy banks with no emergent or marginal vegetation.

Although clearly the requirements of the sailors and anglers are paramount, it should be possible to improve the biodiversity and general environmental appearance of the lake by the introduction of some floating islands and marginal vegetation by the use of coir pallets and rolls.

Floating Reed islands provide instant cover, habitat and protection for fish and invertebrates. The modular floating frame supports pre-established (vegetated) coir fibre plant pallets. As the pallets mature both the vegetation and root establishment provides a haven for all kinds of aquatic life, including fish, newts and invertebrates. The island's protective measures are further enhanced when fitted with a fish refuge. This meshed cage allows fish stocks in but keeps predators out.

Coir Rolls are manufactured to any specification, depending upon specific site requirements. Coir Rolls are an excellent technique for establishing marginal vegetation around lake edges, canals, streams and riverbanks.

It is proposed that a number of islands and marginal coir rolls are introduced to the lake consistent with the requirements of the users of the lake.

HABITAT ACTION We4

It is also proposed that this area be designated as the Fairlands Valley Local Nature Reserve.

HABITAT ACTION We5

6.4.3 Large Ponds

A total of 19 large ponds were located in Stevenage Borough (see Table 6.2). There was no access to Oakfield Farm Ponds.

TABLE 6.2

LARGE PONDS WITHIN STEVENAGE BOROUGH

Pond No	Pond	Map Reference	Description
1	Stevenage Golf Course Pond 1	TL269221	60m x 30m. In middle of fairway with a completely open aspect. The grass banks are mown right down to the waters edge. There are several patches of water lilies. No emergent vegetation and minimal hard rush marginal vegetation. Tadpoles present. Carp present.
2	Stevenage Golf Course Pond 2	TL269219	25m x 15m. Edge of fairway. All except eastern boundary mown down to the edge. Half the margin edged by willows, Alder, Hornbeam, Holly and Hornbeam. Lots of leaf litter and no submerged vegetation. Eastern end shallow. Eastern margin shaded but with marginal Marsh Marigold and Yellow Iris. Western margin open aspect with marginal Hard Rush.
3	Stevenage Golf Course Pond 3	TL271218	30m x 15m.Edge of fairway with completely open aspect. Mown down to edge apart from eastern bank. Small island of rushes. No submerged vegetation. Floating Sweet Grass on western and southern sides. Emergent Brooklime at western end and along eastern bank. Marginal Hairy Willowherb, rushes and Water Figwort along eastern bank.
4	Stevenage Golf Course Pond 4	TL269216	15m x 10m. Shaded by Oak, Hornbeam and Hawthorn. Edges not mown. Plenty of submerged Canadian Pondweed. No floating vegetation. Emergent Soft Rush, Brooklime and Hairy Willowherb. Smooth Newt present.
5	Town Centre Pond	TL241242	80m x 15 widening to 70m x 40m. Totally open aspect. Wooden piling to all banks. Banks mostly concreted except for overhanging Hawthorn, Sycamore, and Laurel on northeastern corner. No submerged, floating, emergent or marginal vegetation.

6	Poplars Meadow	TL268235	20m x 10m. Open aspect. Alder, Elder and Hawthorn on east and north banks. 80% of the pond area is covered with Ivy-leaved Duckweed. 40% of the pond has emergent Branched Bur-reed and there is also a stand of Yellow Iris at the southern end. Also some emergent Brooklime and Floating Sweet Grass. Marginal Woody Nightshade and nettles. The pond is full of rubbish.
7	Towers Pond	TL239238	30m x 30m. Fairly open aspect, but surrounded by mature Oak, Hawthorn, Ash and Hornbeam. No submerged or floating vegetation. Emergent Yellow Iris, Greater Reedmace, Marsh Marigold, Hairy Willowherb and Common Reed. Marginal nettle, Hedge Garlic, Marsh Marigold, Pendulous Sedge and buttercups.
8	Whomerley Wood Moat Pond	TL246236	25 x 15m. Overshadowed by mature Hornbeam and Oak. No submerged or emergent vegetation and minimal marginal vegetation. Covered in duckweed.
9	Whomerley Wood Moat	TL246237	Moat 6m wide on a pitch radius of 40m. Shaded out by Hornbeam and Oak. No emergent vegetation and minimal marginal vegetation
10	Whomerley Wood Six Hills Way	TL247238	30m x 15m. Lined with overhanging Hornbeam on the north, east and west sides. South bank coppiced Hazel and sapling Ash and birch. Reasonably open aspect. 30% of the area of the water is a mat of Parrot's Feather. The other 70% is open water full of Water Soldier. Minimal emergent Soft Rush. Marginal bramble and Honeysuckle on southern bank. Great Crested Newt present.
11	Monks Wood West Pond	TL244232	15m x 10m.Shaded by mature Oak and Hornbeam. Covered in duckweed. Emergent Pendulous Sedge and Yellow Iris. No marginal vegetation.
12	Monks Wood East Pond	TL244232	20m x 10m. Fairly shaded by Oak, Silver Birch and Hornbeam. Covered in duckweed. Emergent Yellow Iris, Greater Pond Sedge and Floating Sweet Grass at southern end. Minimal marginal vegetation except for stand of Pendulous Sedge in southwest corner.

13	Symonds Green Common North Pond	TL221251	20m x 10m. Fairly open aspect but lined on the north bank by Oak and marginal bramble. No submerged or floating vegetation. Plenty of emergent and marginal Yellow Iris, Reed Sweet Grass and Greater Pond Sedge. There is a channel joining the north and south ponds, which is used as a crossing point by the public.
14	Symonds Green Common South Pond	TL221251	30m x 20m. Fairly open aspect but overhanging mature willows and Field Maple on the south and west banks. No submerged or floating vegetation. Emergent and marginal Reed Sweet Grass, Yellow Iris and nettles on north and east banks.
15	Fishers Green Common	TL222261	30m x 10m. Fairly open aspect but with dense brambles, nettles, Elder and willow around margins. Minimal floating algae and floating Sweet Grass and submerged starwort. Emergent Lesser Spearwort and Water Forget-me not, Woody Nightshade and sedges. Marginal Hard and Soft Rush in northwest corner.
16	Ascot Crescent	TL260263	20m x 15m. Open aspect. Lined with Ash, wild rose, Oak and Elder. Abundant submerged/floating milfoil with minimal water lily. Abundant emergent Branched Bur-reed, Water Forget-me-not and minimal Water Plantain. Marginal Water Forget-me not, Hairy Willowherb, Soft Rush, Hard Rush, Brooklime, Woody Nightshade. Abundant leaf litter with some soil above water. Smooth Newt present.
17	Chells Manor	TL267252	40 m diameter with large island in middle. Fairly open aspect but all island and pond banks lined with overhanging Hawthorn, bramble, Elder, Ash, pyrocantha, willows, limes and Sycamore. No floating or submerged vegetation. Emergent Yellow Iris and Hard Rush at northern end.
18	Oakfield Farm Ponds	TL222248	No access

19	Margaret's Wood, Todd's Green	TL221266	30m x 20m. Some open aspect, but completely surrounded by overhanging Hornbeam, Elder, Hawthorn, Oak and willows. There are also a large number of willows growing out of the water. 30% of the pond area is covered by floating and submerged starwort. Minimal emergent Yellow Iris and marginal nettles. Great Crested Newt present.

The water levels of these large ponds throughout the year depends on a combination of their water source, outlets and their underlying water tables. In periods of drought it is possible for these ponds to dry out and there is little that can be done to prevent it. Ponds such as these are called seasonal ponds and are in some ways advantageous as fish populations are controlled which is a significantly beneficial to the survival of the invertebrates within the pond.

The recommended action for each of the remaining 18 ponds is as follows:

Stevenage Golf Course Pond 1

This is a large pond in the middle of the fairway with Common Toad, Common Frog and Smooth Newt known to be present. Like many golf course ponds it is mown right down to the edges and has no emergent vegetation and minimal marginal vegetation. Large carp are also present in the lake, which muddy the water and eat any aquatic life including vegetation. The recommended action is therefore to consider the removal of the carp.

HABITAT ACTION We6

Introduce submerged and emergent vegetation from ponds elsewhere on the course.

HABITAT ACTION We7

Consider the implications and benefits of stopping mowing within the out-of-bounds markers.

HABITAT ACTION We8

Stevenage Golf Course Pond 2

This pond is to the side of the fairway, is silting up (and becoming dominated by self-set willows) and is gradually being shaded out by the bankside trees. Great Crested Newt and Common Frog are known to be present. The recommended actions are therefore to remove some of the mud above the existing water level to create new marsh.

HABITAT ACTION We9

Remove the willow and alder on northern bank and three crack willows at the eastern end.

HABITAT ACTION We10

Introduce emergent vegetation from ponds elsewhere on the course.

HABITAT ACTION We11

Consider the implications and benefits of stopping mowing within the out-of-bounds markers.

HABITAT ACTION We12

Stevenage Golf Course Pond 3

Pond 3 is at the edge of the fairway and is in fairly good condition with plenty of natural floating, emergent and marginal vegetation. Great Crested Newt, Smooth Newt, Common Toad and Common Frog are known to be present. It would, however, benefit from the introduction of some submerged vegetation and a less strict mowing regime on the banks. The recommended action is to introduce some submerged vegetation from ponds elsewhere on the course.

HABITAT ACTION We13

Consider the implications and benefits of stopping mowing within the out-of-bounds markers and behind eastern bank.

HABITAT ACTION We14

Stevenage Golf Course Pond 4

A relatively small shady pond away from the fairway and surrounded by trees. It has some emergent vegetation but benefits from a substantial amount of submerged Canadian pondweed. Weed collected from here can be used to inoculate ponds 1-3. The southeast corner is silting up with soil washed down from the stream. The recommended action is therefore to remove the silt from the southeast corner.

HABITAT ACTION We15

Town Centre Pond

This pond is situated close to the town centre and is clearly an attraction to the residents from the nearby housing estates. Unfortunately, much of the bank is concreted and there is no natural vegetation. The recommended actions are in two phases. Phase one is to introduce some native submerged and floating vegetation, ideally from one of the other ponds in the town.

HABITAT ACTION We16

The second phase is to agree with HMWT a longer-term enhancement plan for the pond.

HABITAT ACTION We17

Poplars Meadow and Pond

Poplars Meadow is an area of ancient hay meadow next to Gresley Way. At the southern end of the site, behind Sainsburys, there is a small pond with marginal, floating and submerged vegetation and it has high potential for improvement. Unfortunately, it is currently full of litter, including a shopping trolley, and is an eyesore. This is not helped by the large amount of plastic bags both on the site and in the trees that have been blown from the superstore.

The required action is to clear the litter from the pond and the surrounding area on a regular basis. It is recommended that the local community be invited to become involved in the future management of the pond and possibly be responsible, with the supermarket, for collecting litter from the pond and surrounding area.

HABITAT ACTION We18

Towers Pond

During the 1990s Towers Pond was in very poor condition. However during 1999/2000, at the request of local residents, the pond was restored and is now in excellent condition with an abundance of emergent and floating vegetation. Also, the quality of the water has probably been improved by the request to not feed the ducks. The pond can dry out in high summer but this can have the advantage of removing predators such as fish to the benefit of amphibians. The only recommended action is to introduce some native submerged and floating vegetation, ideally sourced from other ponds in the town. This will provide habitat for species such as the Red-eyed Damselfly.

HABITAT ACTION We19

Whomerley Wood Moat Pond

This pond is in the middle of the moat in the northern section of Whomerley Woods. It is totally shaded out by tall mature trees and has no natural vegetation apart from a covering of duckweed. Due to its age and habitats, it is possible that the pond may contain some rare species of aquatic invertebrates. Accordingly, it is recommended that the pond be surveyed by specialists from the Pond Conservation Trust and management recommendations be informed by their findings.

HABITAT ACTION We20

Whomerley Wood Moat

This is a large moat, being 6m wide on a pitch radius of 40m, but is totally shaded out by hornbeam and oak with no emergent vegetation and minimal marginal vegetation. From experience elsewhere, due to its antiquity, it is possible that the pond may contain some rare species of aquatic invertebrates. It is recommended that the moat be surveyed by specialists from the Pond Conservation Trust and management recommendations be informed by their findings.

HABITAT ACTION We21

Whomerley Wood Six Hills Way

The Six Hills Way pond has a reasonably open aspect but is shaded by some mature tress behind the south bank. The pond also contains two introduced species of aquatic plants, Parrot's Feather and Water Soldier. Although introduced, Water Soldier is an attractive feature and provides structure for aquatic insects. Parrot's Feather, however, is very invasive and should be removed. The recommended action is therefore, to remove the Parrot's Feather and dispose of appropriately.

HABITAT ACTION We22

Remove ash and birch saplings and mature hornbeam on southern bank to open up the aspect.

HABITAT ACTION We23

Monks Wood West Pond

This relatively small pond is in the middle of Monk's Wood and is totally shaded by mature Oak and Hornbeam and covered in duckweed. There is some emergent Pendulous Sedge and Yellow Iris but no marginal vegetation. It is recommended that some trees be removed at the southern end to open up the aspect to maintain the growth of marginal vegetation.

HABITAT ACTION We24

Monks Wood East Pond

The east pond is fairly shaded by Oak, Silver Birch and Hornbeam and covered in duckweed. There is emergent Yellow Iris, Greater Pond Sedge and Floating Sweet Grass at the southern end, but minimal marginal vegetation except for a stand of Pendulous Sedge in the southwest corner. As for the east pond, it is recommended that some trees be removed at the southern end to open up the aspect to maintain the growth of marginal vegetation.

HABITAT ACTION We25

Symonds Green Common North and South Ponds

The north and south ponds are two adjacent ponds joined by a small channel through the causeway that separates them. Unfortunately, this channel can be crossed by bikes, and has logs put in it to enable pedestrian access, activities which are damaging the bankside habitats. There is plenty of emergent and marginal vegetation in both ponds but no submerged or floating vegetation.

The recommended actions are therefore to block the hole in the hedge or to deepen the channel to prevent the causeway from being used a crossing point.

HABITAT ACTION We26

Remove the logs and rubbish from the ponds.

HABITAT ACTION We27

Introduce native submerged and floating vegetation, ideally from ponds elsewhere in the town.

HABITAT ACTION We28

Fishers Green Common

The pond has some minimal submerged, floating, emergent and marginal vegetation but is essentially lined by trees and brambles/nettles. There is also some rubbish in the pond. The required action is to clear out the rubbish.

HABITAT ACTION We29

Ascot Crescent

The pond is situated in a well-established residential area, with houses adjacent to and overlooking the pond. This is a generally well-balanced and well-vegetated pond. Smooth Newt, Common Toad and Common Frog are known to be present. The main concern is the amount of leaf litter that is accumulating in the pond, the presence of willow saplings in the silting areas of the pond and the future re-growth of the large pollarded willow on the south bank. The recommended actions are therefore to remove some leaf litter from the open areas of water.

HABITAT ACTION We30

Remove the willow saplings from the pond.

HABITAT ACTION We31

Re-pollard and selectively remove the large pollarded willows on the southern bank.

HABITAT ACTION We32

Chells *Manor*

Chells Manor is a fairly large pond with an island in the middle. It has a fairly open aspect but all island and pond banks are lined with overhanging trees and shrubs. There is a small amount of emergent Yellow Iris and Hard Rush at the northern end, but no floating or submerged vegetation. The recommended actions are therefore to remove a proportion of trees and shrubs from the southern bank to open up the aspect.

HABITAT ACTION We33

Introduce some native submerged and floating vegetation, ideally from other ponds in the town.

HABITAT ACTION We34

Margaret's Wood, Todd's Green

A fairly sizeable pond with some open aspect, but mainly shaded by overhanging Hornbeam, Elder, Hawthorn, Oak and willows. There are also a large number of willows growing out of the water. The recommendation is therefore to remove some of the trees to open up the aspect, whilst retaining suitable habitat for the Great Crested Newts.

HABITAT ACTION We35

Adopt a pond Scheme

Many ponds are adjacent to housing estates and provide a valuable green space close to home. Contact should be made with the local residents to encourage them to 'adopt' the pond with a view to carrying out litter picks and small-scale management tasks, in association with the Council.

Trial an 'Adopt a Pond Scheme' with one local community group.

HABITAT ACTION We36

6.4.4 Garden Ponds

The Borough's lakes and ponds have been covered in Sections 5.4.2 and 5.4.3 respectively. However, possibly the largest and most significant wetland resource in the Borough are garden ponds, which are covered in the Neighbourhood Nature Habitat Action Plan (see Section 7.4.4)

6.4.5 Chalk Rivers

The Borough's demand for water contributes to abstraction of water, which will affect the River Beane and its special wildlife. There should be a campaign to raise awareness of the effects of Stevenage's demand for water on this important chalk river. The town's residents and businesses should be encouraged to save water and thereby contribute to the conservation of Hertfordshire's chalk rivers.

HABITAT ACTION We 37

6.4.6 Stevenage Brook

All rivers are designated as Biodiversity Action Plan (BAP) priority habitats under the UKBAP, provided that the "reaches are not heavily degraded with little scope for improvement, for example because they are heavily canalised". Although the Stevenage Brook has a significant number of issues, including water quality and modifications, it still fits within the scope of UKBAP Priority Habitat Description for Rivers.

The Stevenage Brook is covered by the Thames River Basin Management Plan (water body GB106038033310), which states that the river should reach Good Ecological Status (GES) by 2027. The reasons that the water body does not currently meet GES are phosphate levels and poor invertebrate abundance and diversity.

Stevenage Brook currently first appears at Six Hills Way and then runs through Elder Way Flood Meadow, Broadwater Marsh, Stevenage Brook Marsh and finally leaves Stevenage Borough via the Stevenage Golf Course. However, early maps predating the development of the new town shows that there was a spring that fed the Stevenage Brook at Bedwell Plash (TL241243), from where the Brook flows south, under the roundabout at Broom Barn (TL240238) before emerging in the section currently above ground. The maps also show a branch arising from a pond north of Holy Trinity Church (TL235249), which could also conceivably be a spring-fed source, as well as another branch that appears to rise from a pond at Symond's Green (TL221251). Map contours support the idea that the catchment extends to just south of Whitney Wood, but that water from Fisher's Green itself probably feeds into the Hiz catchment.

The phosphate levels and lack of invertebrate abundance and diversity are linked to a certain extent and river restoration can certainly play a major part in helping the brook improve in richness and diversity. This includes creating a range of habitats suitable for a range of invertebrates and fish species as well as using natural habitats to filter poor quality water. The condition of the water may also be improved by the provision of silt traps in the road drainage systems before they discharge into the brook.

It is recommended that a study be carried out to investigate the potential for restoration of the Stevenage Brook.

HABITAT ACTION We 38

6.5 Local Nature Reserves

Local Nature Reserves (LNRs) are for both people and wildlife. They are places with wildlife or geological features that are of special interest locally and offer people special opportunities to study or learn about nature or simply enjoy it.

Natural England recommends that LNRs should be:

a. greater than 2ha in size
b. capable of being managed with the conservation of nature and/or the maintenance of special opportunities for study, research or enjoyment of nature as the priority concern

and also be either:

c. of high natural interest in the local context or
d. of some reasonable interest and of high value in the local context for formal education or research or
e. of some reasonable natural interest and of high value in the local context for the informal enjoyment of nature by the public

It is recommended that that all the wetland sites listed above are assessed to determine if any are eligible for designation as a Local Nature Reserve.

HABITAT ACTION We39

6.6 Wetlands Habitat Action Plan

The Wetlands Habitat Action Plan is shown in Table 6.3.

TABLE 6.3

WETLANDS HABITAT ACTION PLAN

Action No.	Site	Action	By Whom (TBA)	By When (TBA)	Success Criteria
We1	All Wetland Wildlife Sites	Include appropriate policies in the Local Development Framework and other strategic documents to ensure protection	SBC	Publication of Local Development Framework	Appropriate policies published.
We2	Barnwell School	Introduce submerged vegetation	SBC	December 2010	Before and after photos
We3	Fairlands Valley Park Lakes	Review the management plans for these lakes in the light of the recommendations of the Biodiversity Action Plan.	SBC	December 2010	Plan Issued
We4	Fairlands Valley Park Main Lake	Introduce floating islands and marginal coir rolls	SBC	December 2010	Before and after photos
We5	Fairlands Valley Park Lakes	Designate Fairlands Valley Lakes 2-4 as a Local Nature Reserve.	SBC	May 2013	Reserve Designated
We6	Stevenage Golf Course Pond 1	Consider removal of Carp	SBC/SLL	December 2010	Carp removed
We7	Stevenage Golf Course Pond 1	Introduce emergent and submerged vegetation	SBC/SLL	December 2012	Before and after photos
We8	Stevenage Golf Course Pond 1	Consider the benefits and implications of stopping mowing within the out of bounds markers	SBC/SLL	December 2011	Before and after photos
We9	Stevenage Golf Course Pond 2	Remove mud above water level	SBC/SLL	December 2011	Before and after photos
We10	Stevenage Golf Course Pond 2	Remove willow and alder on northern bank and three crack willows at eastern end	SBC/SLL	December 2011	Before and after photos

We11	Stevenage Golf Course Pond 2	Introduce emergent vegetation	SBC/SLL	December 2011	Before and after photos
We12	Stevenage Golf Course Pond 2	Consider the benefits and implications of stopping mowing within the out of bounds markers	SBC/SLL	December 2011	Before and after photos
We13	Stevenage Golf Course Pond 3	Introduce some submerged vegetation.	SBC/SLL	December 2011	Before and after photos
We14	Stevenage Golf Course Pond 3	Consider the benefits and implications of stopping mowing within the out of bounds markers and behind eastern bank	SBC/SLL	December 2011	Before and after photos
We15	Stevenage Golf Course Pond 4	Clear silt from southeast corner	SBC/SLL	December 2012	Before and after photos
We16	Town Centre Pond	Introduce some submerged and floating vegetation.	SBC	December 2010	Before and after photos
We17	Town Centre Pond	Agree with HMWT a longer-term development plan for the pond.	SBC	December 2010	Plan issued
We18	Poplars Meadow	Clear the litter from the pond and the surrounding area.	SBC	December 2010	Before and after photos
We19	Towers Pond	Introduce some submerged and floating vegetation.	SBC	December 2010	Before and after photos
We20	Whomerley Wood Moat Pond	Pond Conservation to carry out a survey.	SBC	December 2012	Survey report issued
We21	Whomerley Wood Moat	Pond Conservation to carry out a survey.	SBC	December 2012	Survey report issued
We22	Whomerley Wood Six Hills Way	Remove the Parrot's Feather.	SBC	December 2010	Before and after photos

We23	Whomerley Wood Six Hills Way	Remove Ash and birch saplings and mature Hornbeam on southern bank to open up aspect.	SBC	December 2010	Before and after photos
We24	Monks Wood West Pond	Remove some trees at the southern end to open up the aspect.	SBC	December 2011	Before and after photos
We25	Monks Wood East Pond	Remove some trees at the southern end to open up the aspect.	SBC	December 2011	Before and after photos
We26	Symonds Green Common North and South Ponds	Block the hole in the hedge or to deepen the channel to prevent the causeway from being used a crossing point.	SBC	December 2010	Before and after photos
We27	Symonds Green Common North and South Ponds	Remove the logs and rubbish from the ponds.	SBC	Annually	Before and after photos
We28	Symonds Green Common North and South Ponds	Introduce submerged and floating vegetation.	SBC	December 2010	Before and after photos
We29	Fishers Green Common	Clear out the rubbish.	SBC	Annually	Before and after photos
We30	Ascot Crescent	Remove some leaf litter from the open areas of water.	SBC	December 2010	Before and after photos
We31	Ascot Crescent	Remove the willow saplings from the pond.	SBC	December 2010	Before and after photos
We32	Ascot Crescent	Re-pollard/remove large pollarded willows on the southern bank.	SBC	December 2010	Before and after photos

We33	Chells Manor	Remove the trees and shrubs from the southern bank to open up the aspect.	SBC	December 2012	Before and after photos
We34	Chells Manor	Introduce some submerged and floating vegetation.	SBC	December 2010	Before and after photos
We35	Margaret's Wood, Todd's Green	Remove some of the trees to open up the aspect.	SBC	December 2011	Before and after photos
We36	Ponds	Trial an 'Adopt a Pond Scheme' with one local community group.	SBC	Spring 2011	First Report March 2011
We37	River Beane	Run a campaign to raise awareness of the need to save water in order to conserve chalk river habitats.	SBC	Summer 2011	Campaign report by March 2012
We38	Stevenage Brook	Carry out a study to investigate the potential for restoration of Stevenage Brook	SBC	Summer 2010	Report issued
We39	All	Assess all wetland sites to determine if any are eligible for designation as a Local Nature Reserve	SBC	December 2010	Issue Recommendations

7. NEIGHBOURHOOD NATURE ACTION PLAN

7.1 General

Neighbourhood nature refers to the habitats and the species that inhabit them, in our cities, towns and villages – the places we call our home. Neighbourhood nature includes our gardens, local parks, schools and the green spaces surrounding our work places. For much of the time neighbourhood nature provides our main contact with wildlife. It provides the natural backdrop to our activities and enriches our lives at all levels.

Wildlife is everywhere. Some form of natural life is present in almost every environment on earth. In our towns and cities, wildlife is present despite the actions of the human population rather than because of them. It is not always recognised that the value of urban wildlife to biodiversity conservation can be as great as that in the countryside.

Great value is also found in the effects it has on the people who encounter it. These effects are not easily quantified but are increasingly understood to be of considerable benefit. Everyday contact with wildlife can lead to an increasing appreciation of nature conservation, as well as environmental policies in general.

Yet there has been an almost unconscious view that nature should not exist in such places. Neighbourhood nature is often perceived of as untidy, unhealthy, weeds or vermin. Recently however, there has been a change in attitudes towards our urban habitats. The challenge now is to take these ideas forward in order to maximise the benefits for both wildlife and people who share these neighbourhoods.

It is probably not widely recognised, that to many forms of wildlife, buildings can appear similar to natural habitats such as cliffs and caves. Kestrels and Peregrine Falcons frequently nest on our churches and tower blocks and bats, Swifts, House Sparrows and Starlings are quick to make use of holes under eaves, particularly in old buildings.

The need people feel for contact with nature together with a growing interest in the environment, and increases in leisure time, have been reflected by the recent popularity of wildlife gardening. In addition to private gardens, the grounds of schools, community centres, retail parks, business parks and housing developments are being cared for with nature in mind. Gardens are generally a mosaic of small habitats formed by lawns, shrubberies, rockeries, old trees, vegetable patches, fruit trees and bushes, hedges, walls, ponds, compost heaps, and the houses and other buildings. It is this variety of habitat that is a key factor in creating the richness of the garden ecosystem.

The feeding of garden birds is an increasingly popular activity. Many garden birds are adaptable and their ability to utilise new habitats and food sources is a key aspect of their ecology. Suburban gardens are believed to support the

highest density of breeding birds of any habitat in Britain. The regular breeding birds of suburbia are mostly those of open woodland, presumably because the patchwork of garden habitats resembles the richest of woodland margins.

Garden ponds have turned out to be ideal habitats for several amphibians. Amphibians in general like dense vegetation around part of the perimeter of the pond. The abundance of such habitats in suburbia, together with a fair amount of introduction, has enabled Common Frogs and Smooth Newts to become widespread in urban areas.

Even allotments can play an important role. The open spaces provided by allotments can provide a significant wildlife resource in urban areas. Many species of birds will breed or feed in such areas. Compost heaps will support a variety of invertebrates and not infrequently, Slow Worms and Grass Snakes benefit from the habitat mosaics created there.

7.2 Overall Objectives

To maximise biodiversity in the urban environment by encouraging the design and use of our buildings, gardens and allotments to be sympathetic to the requirements of our wildlife.

By far the greatest threat to the urban environment is the continual demand for more of it. The insatiable demand for more housing, offices and factories results in the loss of more greenbelt or infill on brownfield sites within our towns. In some respects the loss of brownfield sites has a more adverse effect on wildlife than the loss of green belt, which is very often arable farmland land with little wildlife value. In reality it will not be possible to stop or slow down the demand for new buildings and therefore it is more appropriate to divert our energies into ensuring that our urban environment is tailored to maximise its biodiversity potential.

The design and construction of modern buildings has seriously reduced the breeding and roosting sites for both birds and bats. Even on older buildings these sites are being lost due to repairs or restoration work. It is therefore important to try and influence the design of new buildings to provide suitable nesting and roosting sites and to retrospectively introduce such sites to existing buildings.

Fortunately, gardening for wildlife and the provision of garden ponds is on the increase and in some instances results in wildlife populations higher than those found in the countryside where their natural habitat is being lost. However, with a little guidance just minor changes to the design of wildlife gardens and ponds it is possible to increase the biodiversity value considerably.

Similarly allotments provide an attractive habitat for some forms of wildlife but with just a little extra effort, could provide ideal habitats for creature such as slow worms and snakes.

Therefore, the key to maximising biodiversity in the urban environment is not to oppose the relentless spread of urbanisation, but to ensure that the requirements of our wildlife are built into its design and that the Borough's residents are made aware of how to encourage wildlife into their homes and gardens.

7.3 Wildlife Sites

Of the 40 Wildlife Sites in Stevenage Borough only Exeter Close is classified as a neighbourhood nature site (See Table 7.1).

It is recommended that SBC include appropriate policies within the Local Development Framework and other strategic documents to protect the Exeter Close Wildlife Site from damage through development.

HABITAT ACTION N1

TABLE 7.1

NEIGHBOURHOOD NATURE WILDLIFE SITES WITHIN STEVENAGE BOROUGH

WILDLIFE SITE REF.	NAME OF SITE	SITE AREA (ha)	DESCRIPTION
22/036	Exeter Close *	-	Houses and the nearby Wellfield Wood is an important area for protected species.

* Not owned by Stevenage Borough Council

7.4 Non-designated Sites with Improvement Potential

7.4.1 General

There are a number of features in the urban environment, which with a little modification can have a significant effect on biodiversity. These are:

a. Buildings
b. Gardens
c. Garden Ponds
d. Allotments

7.4.2 Buildings

In the past the construction of buildings was such that there were open eaves, loose tiles and holes in the walls, all of which provided both nesting and roosting habitats for bats and birds. However with modern construction techniques eaves are fitted sealed or with grilles, tiles are fitted with no gaps and walls are built with no holes. The situation is made worse by the fact that even on old buildings nesting and roosting sites are being lost due to repairs and restoration work. For some species such as the Swift this has had a devastating effect on their populations.

Stevenage's buildings could be more biodiverse through the inclusion of features to benefit nesting and feeding birds and roosting bats. The inclusion of 'green or brown' roofs on buildings, along with spaces for birds and bats should be a priority in light of declining populations of all bats and some urban birds.

The screaming of Swifts in early May is a real sign that summer has arrived. Swifts have all-dark plumage, narrow scythe-shaped wings and on a very close view reveal a pale throat. They spend most of the year on the wing, only touching down at the nest site during the summer. They even 'roost' on the wing!

Having completed a 14,000-mile round trip to South Africa during our winter months, they are only with us for four months to breed before once again setting off on their long return journey. However, because of the loss of their breeding sites their population has dropped by 40% in the last 15 years (Swift

Conservation) and it is predicted that they will be extinct within 20 years if replacement nesting sites are not provided.

There are a number of ways of preserving and increasing the number of nest sites:

a. Preserve existing nesting sites in old buildings
b. Ensure that there is provision for nesting sites in new-build designs
c. Retrospectively provide nest sites in existing buildings by modifying the design or installing nest boxes.

More information on Swift Conservation can be found at **www.swift-conservation.org**

There are Swift colonies in Stevenage Old Town and it is proposed to instigate a plan to not only safeguard the existing nesting birds but also attempt to get them to expand into adjacent areas. The recommended action is to:

a. Identify the Swift colonies in Old Stevenage and carry out a census of the nesting pairs.

HABITAT ACTION N2

b. Engage with and encourage local residents and businesses in the area of the colony to preserve the existing nest sites and to create new sites. Through planning control, seek to incorporate Swift nesting places in new buildings and/or developments.

HABITAT ACTION N3

c. Encourage local residents and businesses adjacent to the study area to incorporate nest sites into their buildings. Through planning control, seek to incorporate Swift nesting spaces in new buildings both in and around the existing breeding colony and across the rest of Stevenage.

HABITAT ACTION N4

d. Carry out an annual survey for nesting Swifts in the main colonies, adjacent areas and newly created nest sites.

HABITAT ACTION N5

e. Agree a Swifts Action Plan with Stevenage Homes Limited to ensure Swift's needs are considered when new housing is planned or repairs are made to existing stock. Consider inclusion of brown and green roofs into buildings.

HABITAT ACTION N6

An example of how Macclesfield residents have rallied round to try and safeguard the future of "their" swifts is given in the Case Study below.

Case Study – Macclesfield Express, Wednesday March 18, 2009

Residents have successfully campaigned to save endangered swifts living in their rooftops- by persuading their landlords to make special nest holes for them. When Cheshire Peaks and Plains (CPP) announced plans to replace the roofs on Brookfield Lane, the tenants' first thoughts were for the feathered friends who inhabit their eaves every year.

So, led by resident April Boswall, they called on pressure group Swift Conservation to help. Mum-of-two April, 41, said: "When they told me what they were going to do, my first thought was for the swifts. A lot of the houses on our road get them. I get most with about eight or 10 each year, so we contacted Swift Conservation first thing to let them know. They got back to us and then spoke to CPP on our behalf."

CPP had already started the work, but agreed to adapt the fascia boards with little 1" by 2" cubbyholes for the protected swifts to swoop into.

Housewife April, who lives with husband Dave, added:" They've made me three at the front and five at the back and I so hope it works and they come back this year. I so look forward to seeing them, I absolutely adore them. They swoop from the sky, then fly up the side of our houses and into the roofs, it's an amazing sight."

April and her neighbours have been asked by Swift Conservation- who survey the birds in a bid aid their survival- to keep them informed on the Brookfield Lane population.

Brian Martin of Swift Conservation said: "This kind of roofing work is vital for the survival of these birds – which have a large population in Macclesfield – because about 95% use eaves to build their nests. All they need is a tiny edge of a gable or eave. If more is not done to protect swifts, they could be extinct by 2028.

A CPP spokeswoman said:" It has been fantastic to work with Swift Conservation and local residents to continue to enable these birds to visit this particular area of Macclesfield and nest. We are grateful to the local residents, some of whom agreed for roofing work on their properties to be delayed and for adjustments to be made to their roofs to accommodate these birds."

7.4.3 Gardens

Gardening for wildlife has been with us for some time now but to many it is still just a matter of planting a berry-bearing plant, a butterfly bush and a sunflower. However, with very little extra effort it is possible to significantly increase the attractiveness of a garden to wildlife.

The kinds of plants we choose can have a profound influence on biodiversity. A diverse range of plants will, in general, lead to a diverse range of visiting animals, but there are other important guidelines to bear in mind when planting. For example:

- Flowers with flat-topped umbels or daisy-like heads are particularly attractive to many nectar-seeking insects
- Flowers with complex flowers (e.g. double flowers) can make nectar inaccessible to insects.
- Sterile flowers (e.g. Hydrangea) are of limited use in the wildlife garden.
- Plant flowers in large blocks of colour to attract poorly sighted insects like butterflies.
- There's no need to limit planting to native stock only, especially in the nectar border, but be sure to choose some natives, particularly shrubs and trees, which are associated with thousands of insects and other animals.
- Plant for cover as well as appearance: a good thorny hedge or ivy-covered wall will give protection to many nesting birds and other animals.
- Avoid using plants that are known to cause problems in the wider environment, e.g. Spanish Bluebells, Japanese Knotweed, Parrot's Feather and New Zealand pygmy weed.

As well as being thoughtful about how we stock our garden with plants, there are many other ways in which we can boost garden biodiversity.

- Provide animals with water. Even installing a birdbath will have a very noticeable effect; but if you can go the whole way and provide a pond, you will notice a big difference.
- Create 'habitat piles'. These can be piles of logs, stones and rubble, cuttings, hollow stems and canes, or just about anything else. As long as they are left undisturbed, they will attract myriad invertebrates and other small animals.
- A compost heap is, in one sense, just another kind of habitat pile. However compost heaps also have unique characteristics (e.g. they generate heat) that make them extremely productive microhabitats in the garden. They also benefit the wider environment because it's a direct way of recycling vegetable waste.
- Provide nest boxes. Bird nest boxes are a classic way of attracting birds to the garden, but nowadays the concept has been widened to

include many other animals. You can buy (or often make quite simply) nesting or shelter boxes for hedgehogs, bats, solitary bees, bumblebees, ladybirds, lacewings and many other insects. Very often, the shelters you put up will be used in unexpected ways; for example bumblebees sometimes use nest boxes intended for birds.

So, with a few guidelines it is possible to enhance the wildlife garden into one that has a significantly improved biodiversity and provides some habitats that are disappearing from our countryside. The recommended action is therefore to include guidance on wildlife gardening in each issue of the Borough's magazine.

HABITAT ACTION N7

Improve awareness of neighbourhood nature by publishing an annual article in the Council's publication "Chronicle".

HABITAT ACTION N8

7.4.4 Garden Ponds

Garden ponds have been with us for a long time and are fortunately becoming more popular. Apart from providing a tranquil feature in any garden, they also provide a home to a selection of aquatic creatures, including amphibians, dragonflies and insects.

However, it is important to distinguish between an ornamental pond and a wildlife pond. Ornamental ponds are frequently designed with fish in mind and therefore often have filtration systems and are kept meticulously tidy. The planting regime, if any, tends to be more regimented and not allowed to become too invasive.

Wildlife ponds, however, are designed specifically to encourage the maximum amount of wildlife, and are therefore far more natural looking and are allowed to develop in a more haphazard way. A wildlife pond performs a number of tasks.

Firstly, a well-managed wildlife pond will become a thriving habitat for all kinds of creatures. Amphibians, aquatic animals and insects alike will find food and shelter within the pond's ecosystem. Secondly, a wildlife pond can become a haven for wild birds and mammals. At times it may prove a lifesaver, as it may be the only source of water in times of drought and during high summer. Thirdly, a wildlife pond will prove a popular breeding ground for many different amphibians and insects.

One of the biggest and most crucial decisions is where to site the wildlife pond. It is such an important consideration because the site will, by and large, determine how successful the pond is. So when choosing the location of the pond, try to opt for a spot or a corner of the garden that's quiet and will remain undisturbed. This allows the resident and visiting wildlife to feel safe and secure. Also try to site the pond away from any deciduous trees, as their shedding leaves in autumn can prove to be a menace.

The wildlife pond will need a bare minimum of 4 hours of sunlight a day. Having the pond in a spot that is constantly sunny can lead to an overabundance of oxygen-gobbling algae. Similarly, a pond that is mostly in shade will be cold and uninviting, and is less likely to thrive.

The shape and depth of the pond is also important. A pond with sheer sides will prove a death trap for many animals, particularly small animals such as hedgehogs that can't swim, but have no way of crawling out of the water. This is why it's so important to have a pond with a number of shallow shelves. These shelves not only protect the wildlife from drowning, but also allow small mammals and birds safe access to drink, wade and bathe in the water. A shelf around an inch deep is ideal, followed by one or two deeper shelves around 12 inches deep.

The wildlife pond should be at least 18-24 inches at the deepest point. However, the deeper the pond the better as this aids hibernation and shelter for many pond-dwellers. One very important point is that you should never put fish into the wildlife pond, as they will eat much of the wildlife that comes to shelter and live there!

The wildlife pond will basically need three types of plants – marginals (for planting around the boggy edges), oxygenating plants (to help the pond regulate itself and keep clean) and aquatic plants (to provide food, shade and shelter for pond life). Taller marginals will provide shelter and breeding grounds for certain types of insects, whereas frogs and other amphibians may prefer low-growing foliage on your pond shelves. Always take your time to

research and choose your aquatic plants, as your choices will ultimately dictate how successful your pond becomes. Get the balance right and your wildlife pond will require very little management and interference.

Therefore, whilst ornamental ponds are an attractive feature of any garden, wildlife ponds provide a much more varied habitat and therefore significantly contribute to increased biodiversity. The recommended action is therefore to publish a Wildlife Pond article in the Council's publication "Chronicle".

HABITAT ACTION N9

7.4.5 Allotments

Allotments are more like farmland cultivated by traditional means than gardens as they are labour intensive and are probably subjected to less application of herbicide and pesticide. No matter how well cultivated allotments are, there are always overgrown areas on unoccupied plots, margins and unused corners. These areas are left to develop naturally and provide ideal habitat for a variety of wildlife.

Even parts of the plots that are in use can be set aside or a small pond dug and can benefit from the guidelines given for gardens and garden ponds (see Sections 7.4.3 and 7.4.4 respectively). Also, as allotments are generally out of view from the house more extreme measures can be considered such as laying down a large sheet of corrugated iron, either on unused areas or on areas that are left fallow. Many allotment holders used these sheets as a matter of course to suppress weeds on sections that they propose to sow the following year. The warm ground below these sheets are attractive to cold-blooded creatures such as Slow Worms and Grass Snakes.

The recommended action is therefore to liaise with the Stevenage Gardens and Allotments Association to publish an article on managing allotments for wildlife in the Council's publication "Chronicle".

HABITAT ACTION N10

7.4.6 Street Trees

Trees planted along streets help to define and frame the streetscape giving visual identity and enhancing the street scene.

One of the most topical issues with street and garden trees is that of subsidence. Trees are increasingly the subject of litigation over claims of subsidence and damage to buildings. Although trees are often not a cause of soil shrinkage or heave, the public perception towards trees can be one of wariness. It is important to note that the perceived threat of subsidence is much greater than the actual threat. It is estimated that less than 1% of the total tree population has been proven to have caused damage. The adequacy of the building foundations for the local soil and geology is the underlying issue. However, the amount of money lost by tree and property owners due to subsidence claims is considerable, with single claims running into the tens to hundreds of thousands of pounds. Insurance companies, mortgage lenders and the press tend to perpetuate and increase this negative perception.

The importance of street trees should not be underestimated. People in Stevenage will come into contact with street trees more often than trees planted in other locations. Often they are the only significant vegetation growing in streets. Unfortunately the visual amenity provided by street trees is often only truly appreciated when a tree is pruned heavily, or removed, and the difference is noticed.

The particular benefits that street trees provide include:

- enhanced quality of life for people living and working in Stevenage through promoting a sense of well-being and so promoting health

- increased privacy in residential roads and gardens through screening

- increased local property values: a survey of any Estate Agent's window will always show more expensive properties being in "tree-lined streets"

- linking areas of green space

- filtering airborne dust and pollution

- reducing temperature extremes at street level

- they absorb some traffic noise.

It is important therefore to safeguard our street trees and to facilitate the monitoring of their status. It is proposed to create a street tree register, listing

the street, location and species for every tree. Any trees lost for safety reasons should be replanted using ecologically appropriate native species.

HABITAT ACTION N11

There are many disease resistant elm trees (although not native) becoming available, although unfortunately some are not appropriate for hedgerow or woodland planting. However, they are good as standing trees and are suitable for roadside planting. It is recommended that Stevenage consider including elm in its replanting programme (with other appropriate trees e.g. lime to provide nectar and honeydew for invertebrates).

7.5 Neighbourhood Nature Action Plan

The Urban Habitat Action Plan is shown in Table 7.2.

TABLE 7.2

NEIGHBOURHOOD NATURE HABITAT ACTION PLAN

Action No.	Site	Action	By Whom (TBA)	By When	Success Criteria
N1	Exeter Close Wildlife Site	Include policies in Local Development Framework and other strategic documents to ensure its protection	SBC	Publication of Local Development Framework	Appopriate policies published.
N2	Stevenage Old Town	Identify the swift colonies in Old Stevenage and carry out a census of the nesting pairs.	SBC	September 2011	Report issued
N3	Stevenage Old Town	Engage with and encourage local residents and businesses in the area of the colony to preserve the existing nest sites and to create new sites. Through planning control, seek to incorporate Swift nesting spaces in new buildings and developments.	SBC	April 2012	Before and after photos
N4	Stevenage Old Town	Encourage local residents and businesses adjacent to the study area to incorporate nest sites into their buildings. Through planning control, seek to incorporate Swift nesting spaces in all new buildings both in and around the existing breeding colony and across the rest of Stevenage.	SBC	April 2012	Before and after photos

N5	Stevenage Old Town	Carry out an annual survey for nesting Swifts in the main colonies, adjacent areas and newly created nest sites.	SBC	Annually	Report issued
N6	-	Agree a Swifts action plan with Stevenage Homes Limited to ensure Swifts's needs are considered when new housing is planned or repairs are made to existing stock. Consider inclusion of brown/green roofs.	SBC/SHL	December 2011	Swifts Action Plan Issued
N7	-	Include guidance on wildlife gardening in the Chronicle	SBC	Annually	"Wildlife Gardening" articles published
N8	-	Improve awareness of neighbourhood nature by publishing an annual article in the Borough's magazine.	SBC	December 2011	"Neighbourhood" Nature article published
N9	-	Publish a Wildlife Pond article in the Chronicle.	SBC	December 2011	"Wildlife Pond" article published
N10	-	Publish an article on managing allotments for wildlife in the Chronicle.	SBC/SGAA	December 2011	Wildlife Allotment" article published
N11	All	Create a Street Tree Register	SBC	December 2010	Register Issued

8. IMPLEMENTATION AND MONITORING

8.1 Implementation

The delivery of the Biodiversity Action Plan (BAP) will be the responsibility of Stevenage Borough Council (SBC), supported by key partners. The Council and its partners will seek to engage local communities in the conservation of Stevenage's green spaces and to raise awareness of the town's habitats and associated wildlife. There is a significant opportunity to involve the local community in volunteer working groups and the implementation of many of the Neighbourhood Nature Habitat Actions.

It is recommended that progress against the plan will be reported at six-monthly intervals to a Steering Group meeting comprising:

1. A Chairman who has knowledge of Stevenage, experience of nature conservation and guiding a partnership. The chairman could be a representative from an independent organisation, or a senior representative from Stevenage Borough Council who is independent of direct responsibility for the delivery of the BAP.
2. The Stevenage Arboriculture and Conservation Officer.
3. Key partners who have a significant role in delivering the BAP.

The terms of reference of the Steering Group will be to:

1. Monitor and review the progress of implementation of the BAP.
2. Select individuals or organisations to carry out the required monitoring work.
3. Assess the results of the monitoring work.
4. Agree new actions if required as a result of the monitoring work.
5. Ensure that an Annual Report of the progress against the BAP actions is completed each year.

8.2 Monitoring

Ideally the effectiveness of any action that is designed to improve the biodiversity of an area or habitat should be assessed by the monitoring of key species that are reliant on that habitat. The 91 Habitat Actions listed in the BAP fall into five main categories:

1. Environmental maintenance
2. Habitat management
3. Habitat improvement and reconnection
4. Habitat creation
5. Habitat assessment

However, it is likely that monitoring on this scale would require resources beyond the budget of SBC and it will therefore be necessary to concentrate the work on categories 4 and 5. The actions that fall into this category are listed in Table 8.1.

TABLE 8.1

LIST OF SURVEILLANCE ACTIVITIES

Action No.	Site	Action	By Whom (TBA)	By When	Success Criteria
G15	Fairlands Valley Park Southern Sector	Monitor the new hay meadow area in the first year and then biannually for the key indicator species.	SBC	Biannually	Results Issued
G17	Fairlands Valley Park Southern Sector	Assess new hay meadow in year three and if too dense, inoculate with Yellow Rattle.	SBC	2014	Photos
G20	Fairlands Valley Park Southern Sector	Assess extended hay meadow in year three and if too dense, inoculate with Yellow Rattle.	SBC	2014	Photos
G23	Roadside Grass Verges	Monitor each of the verges in the first year and then biannually for the key indicator species.	SBC	Biannually	Results Issued
G24	Roadside Grass Verges	Carry out a flora survey on each of the grass verges.	SBC	Biannually	Results Issued
G25	Roadside Grass Verges	Assess success in year 3 and identify further areas for verge meadows	SBC	2013	Grassland Mowing Plan Updated
N2	Stevenage Old Town	Identify the Swift colonies in Old Stevenage and carry out a census of the nesting pairs.	SBC	September 2011	Report issued

N5	Stevenage Old Town	Carry out an annual survey of the nesting Swifts in the main colonies and in the adjacent areas.	SBC	Annually in June	Report issued
We18	Whomerley Wood Moat Pond	Pond Conservation Trust to carry out a survey.	SBC/PCT	December 2012	Survey report issued
We19	Whomerley Wood Moat	Pond Conservation Trust to carry out a survey.	SBC/PCT	December 2012	Survey report issued

9. SUMMARY

This five-year Biodiversity Action Plan (BAP) for Stevenage Borough covers the period 2010-2014.

The Plan lists 95 SMART actions (projects), as follows:

Grassland habitat	28 actions
Woodland habitat	12 actions
Ancient Hedgerows habitat	5 actions
Wetland habitat	39 actions
Neighbourhood Nature habitat	11 actions

Some of the actions entail the creation of new habitat and in these circumstances it will be necessary to carry out monitoring on key indicator species to assess the effectiveness of the management work. Monitoring work will also include the assessment of some existing habitats.

The delivery of the BAP will be the responsibility of Stevenage Borough Council, supported by key partners. It is recommended that a dedicated officer be appointed/designated to manage the delivery of the plan, particularly as there a significant opportunity to involve the local community in volunteer working groups and the implementation of many of the Neighbour Nature Habitat Actions. There is also a major opportunity to raise awareness of the town's rich resource of wildlife habitats with the local communities.

Progress will be monitored by a Steering Group and progress will be detailed in an Annual Report.

10. GLOSSARY

Agenda 21
An Action Plan for the 21st century endorsed at the Earth Summit. Agenda 21 sets out how we can meet the needs of communities and individual people today, whilst improving the quality of life and safeguarding the environment for future generations.

Biodiversity
Biological Diversity - the total variety of life on earth or any given part of it, the variety of genes, species and habitats within an area.

Biodiversity Action Plan (BAP)
A framework for achieving the conservation of biodiversity based on the targeting of resources towards protecting priority habitats and species. BAPs also provide a means for the involvement in conservation of a wide range of organisations including the participation of members of local communities. BAPs can be prepared at a range of levels: country-wide (e.g. the UK Biodiversity Action Plan), for counties (e.g. the Hertfordshire BAP) or for recognised areas (e.g. the National Forest BAP).

Broadleaved Woodland
10% or less canopy cover by conifers.

Coniferous Woodland
10% or less canopy cover by broadleaved species.

Conservation
The management of habitats and human use of the environment to sustain the diversity of wildlife occurring.

Convention on Biological Diversity
The Convention was signed by the Prime Minister and 150 other Heads of State or Governments at the Earth Summit in Rio de Janeiro in June 1992. Under Article 6A of the Convention signatories must develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity.

Coppicing
The traditional form of management of much of the broadleaved woodland in the UK. It involves cutting down trees and shrubs near ground level, allowing the tree to re-grow from the stump, and re-cutting at intervals of one or more decades to provide a harvest of long straight poles, which may be used for fencing, crafts or construction.

Diversity
An assessment of the richness of different types in a location (which can be a large or small area) including the number of different habitats or numbers of different species.

Earth Summit
A United Nations Conference on Environment and Development held in Rio de Janeiro in June 1992.

Ecology
The study of the inter-relationships between living organisms and their environment.

Environment
The external surroundings (i.e. physical and chemical conditions) experienced by and influencing species and habitats.

Fauna
All animal life.

Flora
All plant life.

Habitat
A place in which a particular plant or animal lives. Often used in a wider sense, referring to major assemblages of plants and animals found together such as woodlands or grassland.

Habitat Action Plan
A targeted programme of management measures aimed at conserving or maintaining/restoring a specific habitat. Habitat Action Plans identify conservation objectives and targets for the habitat in question and specify actions and responsibilities for achieving the objectives.

Habitats Directive
The abbreviated term for *Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora*. This Directive promotes the conservation of certain priority habitats and species within the European Union by requiring Member States to take measures to maintain or restore natural habitats and populations of wild species.

Indicator species
An organism whose characteristics (e.g. presence or absence, population density, dispersion, reproductive success) are used as an index of attributes too difficult, inconvenient, or expensive to measure directly. For example, such characteristics may be used to indicate the degree of pollution or other environmental conditions at a particular locality.

Invertebrates
Animals without a backbone (insects, for example).

Local Agenda 21
Partnerships of local people, communities and organisations to achieve Agenda 21 at a local level.

Local authority
A local government body, such as a County, District of Borough Council.

Local Biodiversity Action Plan
A Biodiversity Action Plan prepared for a local area (usually a single county, grouping of counties, District or Borough). Government guidance recommends that local BAPs correspond to local authority boundaries.
.
Local Nature Reserve (LNR)
An area of land that is of special nature conservation interest locally. LNRs are declared and managed by local authorities under the National Parks and Access to the Countryside Act 1949.

Mixed Woodland
10-90% of both broadleaved and coniferous species in the canopy.

Monitoring
A process of repeated observations of one or more elements of the environment, such as a population of species or water quality. Monitoring should follow a prearranged programme in space and time and use pre-set methods for data collection. Monitoring provides factual information concerning the present state and past trends in environmental parameters.

Nationally rare species
Species of very limited national occurrence and distribution. They are defined as those species known to occur in 15 or fewer of the 10 x 10 km Ordnance Survey grid squares that divide Great Britain.

Nationally scarce species
Species of limited national occurrence and distribution. They are defined as those species known to occur in 16-100 of the 10 x 10 km Ordnance Survey grid squares that divide Great Britain.

Native species
A species that occurs naturally in an area and, therefore, not having been introduced by humans, either accidentally or intentionally.

Non-native species
A species which has become established in the wild in an area (most usually a country) in which it does not naturally occur. Non-native species may be introduced into an area as a result of human activities/ intervention (whether deliberate or accidental). These species may have adverse effects on native species and habitats as a result of competition.

Parkland
This category comprises areas of scattered trees or woodland whose tree canopy cover is less than 30%.

Pollard
A tree that has been cut about two metres above the ground so as to produce a crop of branches suitable for fencing or firewood. Cutting at such a height prevents the new shoots from being eaten by grazing animals

Pollution
The introduction by man, directly or indirectly, of substances into the environment resulting in deleterious effects to wildlife, hazards to human health or hindrance to activities such as fishing and recreation.

Population
All individuals of one species occupying a defined area and usually isolated to some degree from other similar groups of the same species.

Red Data Book species
A species listed in catalogues published by the International Union for the Conservation of Nature (IUCN), national agencies or county-level organisations, listing species which are rare, endangered or vulnerable to extinction globally, nationally or within counties.

Ride
An open unmade track through a wood.

Scrub
Defined as vegetation dominated by locally native shrubs, scrub usually has a canopy less than 5 metres in height, occasionally with a few scattered trees.

Semi-natural habitats
A habitat modified to a limited extent by human activities, but still consisting of species naturally occurring in the area. The majority of important habitats remaining in the UK are considered to be semi-natural as opposed to natural.

Short list species
The top priority species for conservation in the UK as identified in the UK BAP Steering Group Report. This report also identifies a long list of species which are of a lesser, but still national, conservation priority.

Site of Special Scientific Interest (SSSI)
An area of land or water notified by a statutory conservation agency under the Wildlife and Countryside Act 1981 as being of national nature or geological conservation importance.

Survey
An inventory of the attributes of a site, area or region, usually in terms of habitat and associated species and normally following a standardised procedure.

UK Biodiversity Action Plan
A strategy produced in 1994 by the UK Government that provides the framework for fulfilling the UK's responsibilities towards the Convention on Biological Diversity.

UK Steering Group Report
The report following from the UK BAP in 1995 which establishes specific actions and responsibilities for achieving the UK BAP.

Water quality
The nature of a body of water in terms of its physical characteristics, turbidity for instance, and its chemical characteristics, nutrient status or level of pollutants for example.

Wetland
Any habitat that is characterised by the presence of flowing or standing water at some stage in the year. Wetlands can range from open water bodies such as lakes and ponds, to seasonally wet habitats such as carr woodland or lowland wet grassland.

Wildlife Site
A site not qualifying as of national importance for the wildlife it contains (i.e. a SSSI) but regarded to be of importance for wildlife at a county level, its importance being merited in a parish, district, borough or county context.

Woodland
Woodland is defined as vegetation dominated by trees (more than 5 m high when mature) forming a distinct, although sometimes open, canopy. If the cover of tree canopy is less than 30%, the area is shown as scattered trees on the appropriate background habitat. Where there are sizeable open spaces or rides these are recorded as the appropriate habitat.