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Report of the Hammersmith & Fulham Biodiversity Commission

November 2017

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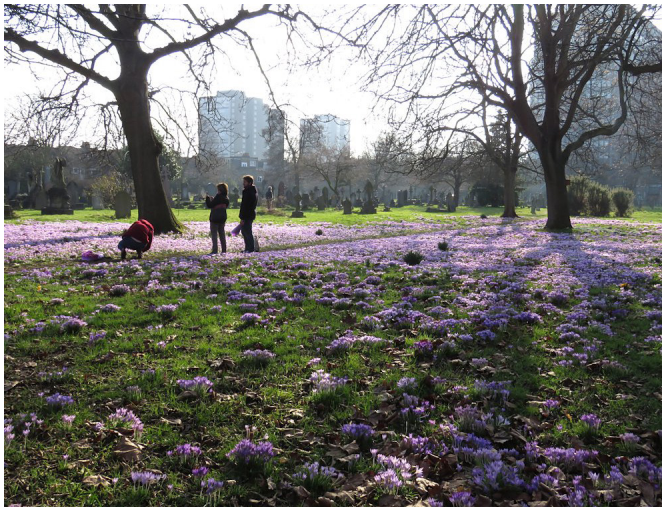
Foreword



"We, after all, are the architects of the urban world… The ingenuity with which we continue to reshape the surface of our planet is very startling…..It's also sobering…. It reminds me just how easy it is for us to lose our connection with the natural world. It's on this connection that the future of both humanity and the natural world depends….Surely it's our responsibility to do everything within our power to create a planet that provides a home not just for us but for all life on earth."

David Attenborough, Planet Earth I

The actions of human beings have become so influential on the wellbeing of all life on earth that scientists have named this as the Anthropocene age ('anthropos' is Greek for human being). A crucial factor in the resilience of all life on earth is biodiversity. This is especially true now that extreme climate events are becoming more frequent.

The Biodiversity Commission was set up because of the need to provide more and better habitats for wildlife in the Borough and London-wide. We need more joined up space for nature to flourish. This is challenging in the current economic climate, but we fail to do so at our peril.

We are hoping that when our report is acted on there will be more opportunities in the Borough to enjoy green spaces which are rich in wildlife. We will see more bees, butterflies and hoverflies, more birds and bats, maybe an occasional hedgehog. Children will be more likely to find a range of "minibeasts" and wild flowers. All this has big implications for our health and wellbeing and, we hope, will increase our awareness of the importance of looking after nature now and in the future.

The Commissioners are all local residents and we hope it will be possible to engage more volunteers to help enhance our green spaces, and more children with opportunities to explore the wildlife and their habitats. At the same time, we hope to influence planning policies so that all stakeholders are working together to enrich the biodiversity of the Borough.

The Commission was launched in January 2017 and completed its work in October 2017. It was established to follow up a report on H&F's current biodiversity, presented to Council in November 2016 by Richard Buckley.

The work has included a literature review (see Appendix B) and an evidence gathering exercise. Specialist council officers and external experts in the field were called to give evidence to the Commission on planning policy and practice, estate management, the variety of trees across the Borough, flood risk management, parks and open spaces and other environmental matters affecting biodiversity. A summary of responses to a request for written evidence is attached as Appendix C. The results of the biodiversity survey which the Commission circulated to residents of the Borough, and which has helped to form our recommendations, is attached as Appendix D.

Morag Carmichael
Chair, H&F Biodiversity Commission

Executive Summary

Biodiversity is a vital aspect of living healthy lives. LBHF aims to be the greenest borough in London and putting biodiversity at the heart of council policy is fundamental to this, as it reconnects us all to nature. In this report we describe what biodiversity is, and show how it contributes value in economic and environmental terms and should be seen as a primary way of promoting a healthy community.

This is demonstrated by examples and reference to research and development in other places with current Government policy described in a series of POSTnotes (from the Parliamentary Office of Science and Technology) within their green infrastructure programme, in which biodiversity is a primary ingredient.

Our recommendations are intended to establish the primary importance of biodiversity in making Hammersmith & Fulham a thriving community in which people and wildlife flourish and our surroundings are enhanced, making it a beautiful place to be. As well as the Council, our recommendations will be communicated to the Mayor of London and national bodies, including the NHS and the Government, as all have published intentions and some policies about biodiversity and its place in a sustainable UK future.

Key Recommendations

For action by Government and national bodies

1. Tenets of EU Environmental legislation to be maintained undiluted post Brexit, in particular those of the Bird and Habitat Directives and the Natura 2000 ecological network of protected areas this legislation supports.

2. The Government to extend the Wildlife and Countryside Act to enable designated green areas (including private gardens) to be established in inner city areas to enhance biodiversity, or to create new legislation specifically for this purpose.

3. The NHS to ensure that every hospital or health centre is a pleasant place to visit with green space, trees and flowers for pollinators and/or a food garden as a teaching tool for nutrition.

For action by the GLA, regional bodies, the OPDC and the Corporation of London

1. The Mayor of London is urged to progress his proposal to make London a National City Park.
2. Herbicides and pesticides to be banned in all public spaces and, where exceptions are necessary to control invasive species such as Japanese knotweed, glyphosate based pesticides to be used only on a cut-and-paste basis.
3. Artificial grass/Astroturf to be banned in public green spaces other than for use to replace existing asphalt sports surfaces, with the possible exception for use on cricket pitches, between the wickets, and in small children's play areas.
4. Efforts to be made to reduce hard standing footprints of sports grounds in parks and commons.
5. Assurances should be given by the Old Oak and Park Royal Development Corporation (OPDC) that the biodiversity of Wormwood Scrubs will be maintained throughout the development of the Old Oak and Park Royal site. Specifically, points of access and the use of the common should be managed to protect the wildlife.
6. Proper consideration must be given to the biodiversity value of Wormwood Scrubs, Mitre yard and North Kensington Gate, and especially to those parts which are designated as a Local Nature Reserve. In particular this means:
   (a) Keeping the area "more wild than tamed", and consulting all the wildlife surveys of the site, including that of Leanne Brisland in 2015 **and that of the London Wildlife Trust in 2016** before commencing any development close to the green spaces.
   (b) Ensuring that new high-rise buildings are sited well away from the perimeter of the site, because of light pollution.
   (c) Not allowing new access to the site anywhere near the Local Nature Reserve. **We also recommend that an alternative plan should be found to the proposed sewer realignment as part of HS2 works because of the heavy impact it would have in a sensitive area.**
   (d) Providing green spaces in the new developments to prevent over-use of Wormwood Scrubs by the greatly increased numbers of local residents.
   (e) Rigorous assessment of the probable impact on wildlife, before any decision is taken to move QPR to the Linford Christie site.
   (f) The railway embankment to the north of the Scrubs is a major site for biodiversity and should be retained. It has a very high boundary permeability into the Scrubs and so enhances to ecological value of the local nature reserve areas adjacent to it.

For action by the Council

1. For the Council to appoint a permanent Ecology Officer and establish an Ecology Centre in or near one of the parks in the Borough. The Ecology Officer's role would be to ensure that ecology and biodiversity are given proper consideration in every aspect of Council policy and to set up and run an attractive Ecology Centre which would provide a focus for the public to become more interested in nature and biodiversity. This could be done with the help of assistants and volunteers. Part of the Ecology Officer's role would be to act as volunteer co-ordinator which would involve organising greening projects around the Borough, training and recruiting volunteers.
2. With the ecology officer in the lead, promote and encourage volunteering initiatives for environmental improvement in the Borough's parks and green spaces. This could involve Friends of Parks groups, Residents' and Tenants' Associations,

existing volunteer groups and organisations and local businesses, as well as individuals of all ages who would benefit from contact with nature and a sense of purpose.

3. Promote and encourage volunteering initiatives for local biodiversity, e.g. Friends Groups, volunteers and Residents Associations to enable them to galvanize, fundraise and make environmental improvements.
4. Planning policies to be made clearer and more robust to ensure the footprints of existing valuable green spaces are maintained and that suitable/adequate green space accompanies all new developments. (See pp 13-14)
5. Suitable streets or sections of them to be closed where schools are located opposite public parks and converted to natural habitats. This could be done in conjunction with sustainable drainage system (SuDS) schemes.
6. The Council to take a more active role in preventing building development in gardens and in promoting diversity within gardens.
7. Significant weight should be given to the biodiversity aspect of trees in all planting situations. This means, for example, more oaks, willows, silver birches, pink/white hawthorn, rowan and alders and fewer exotic trees or double-flowered cherries in future planting.
8. Hedges in all planting situations to include a greater variety of native species.
9. All parks, commons and cemeteries to support "wild" areas, where possible including ponds and wild flower meadows to promote biodiversity - with improved signage to increase understanding and public acceptance.
10. Parks and other public spaces to be re-vegetated to compensate for the loss of vegetation caused by over-pruning, disease, vandalism and old age.
11. Large expanses of asphalt in parks/ commons, such as the area near the Effie Road entrance of Eel Brook Common, to be replaced with lawn, shrubs or wild flower meadows.
12. Enshrine good practice protocols within grounds maintenance for streets and open spaces – pruning, mulching, peat-free, mowing, for example, no mowing under tree canopies, pruning of shrubs limited to 50% of the shrub cover in any one year and any pruning not to be severe, and 1 in 3 street trees at a time (as recommended in the Air Quality Commission report).
13. Herbicides and pesticides to be banned in all public spaces and where exceptions are necessary to control invasive species such as Japanese knotweed, glyphosate based pesticides to be used only on a cut-and-paste basis.
14. Artificial grass/Astroturf to be banned in public green spaces other than for use to replace existing asphalt sports surfaces, with the possible exception for use on cricket pitches, between the wickets, and in small children's play areas.
15. Efforts to be made to reduce hard standing footprints of sports grounds in parks and commons.
16. The Council to access a brochure on planting for biodiversity including pollinators to be published on its website and sent to all householders with their council tax bills.
17. The Council to promote a scheme to green gardens called "From Grey to Green" and to sponsor an annual award for the best transformation.
18. The Council to ensure the Biodiversity Commission's recommendations are incorporated in the work towards the re-tendering of a new Grounds Maintenance contract in 2021, and that biodiversity is a key deliverable with clear targets in this contract. This should involve basic training for the workers on maintenance techniques for gardening for wildlife.
19. The railway embankment to the north of the Scrubs is a major site for biodiversity and should be retained. It has a very high boundary permeability into the Scrubs and so enhances to ecological value of the local

nature reserve areas adjacent to it.

20. To sponsor the revival of Greenfest as an annual event.
21. To facilitate the expansion of outdoor education about nature with schools in the Borough. Also to enable Hammersmith Community Gardens Association to expand its work or a sister organisation to be formed which would enable more families to access informal outdoor learning in our parks and green spaces. We would like biodiversity to be given a higher profile in local schools and for publicity to be provided to highlight how well the topic fits into the national curriculum's requirements. The Ecology Officer would be well-placed to assist with delivering and expanding on outdoor education and advising schools on how to improve biodiversity within the school grounds.
22. The proposed Ecology Officer and Centre would also increase the opportunities for informal learning, both at the centre and as outreach, delivering events and activities in other areas or educating, training and empowering others to do so. We would like this kind of work to be expanded, so that every family in the Borough could easily access one of these schemes, without needing a car to reach it. In addition to engaging the children, their parents are likely to become more interested in nature and biodiversity.
23. To eventually extend the excellent work it has done to make some housing estates more wildlife–friendly to all the housing estates in the Borough. The Ecology Officer, as stated more fully in 4.5 above, would be well-placed to provide support for these groups to pro-actively improve their own neighbourhood.
24. To continue to work on improving air quality in the Borough, as this is also essential to supporting the growth of biodiversity, is important to many people, above all in preventing the early deaths of 203 residents per year.
25. To encourage businesses to provide green spaces and trees on their sites with examples of best practice and its benefits to improve the health and wellbeing of their employees and consequently the efficiency of the business.
26. To maintain and ultimately increase the number of Green Flag parks in the borough which include biodiversity and community participation among their criteria.

For action by businesses

1. Many businesses now engage in Corporate Social Responsibility (CSR) to give back to the community and environment in which they are based. If an employee spent 1% of their working year on CSR, this would equate to approximately 2 working days per year. We would urge local businesses, in particular medium and large businesses (>200 employees) to commit to a minimum of one environmental improvement action day, for 25% of employees, per year in the borough. The Ecology Officer, would be well-placed to provide support for facilitating CSR days by providing links for businesses to the relevant local organisations, community groups, individuals, Tenants and Residents Associations to help them deliver these environmental improvements.

1. Introduction

1.1 What is biodiversity and why is it important?

Biodiversity – or biological diversity – means the variety of life on earth. It refers to all the living organisms and ecosystems that have evolved over three billion years, from the tiniest living cell to plants, animals, their habitats and their genes. Living things form an interdependent ecosystem and our survival depends on this biological diversity.

Biodiversity is the foundation of life on earth. It is crucial for the functioning of ecosystems which give us the products and services without which we couldn't live. Oxygen, food, fresh water, fertile soil, medicines, shelter, protection from storms and floods, stable climate and recreation - all have their source in nature and healthy ecosystems.

Biodiversity is extremely complex, dynamic and varied like no other feature of the earth. Its innumerable plants, animals and microbes physically and chemically unite the atmosphere (the mixture of gases around the earth), geosphere (the solid part of the earth) and hydrosphere (the earth's water, ice and water vapour) into one environmental system which makes it possible for millions of species, including people, to exist. This complex web allows ecosystems to act as carbon sinks and adjust to disturbances like extreme fires and floods.

"Biodiversity is the backbone of life on earth"
"Its how the planet continues to live"

Respondent to the H&F Biodiversity Survey, 2017

Through biodiversity, we may live healthy and happy lives. Huge numbers of plants give us oxygen to breathe and a vast array of foods and materials. Without a diversity of pollinators, plants and soils, our supermarkets would have far less produce. Parks, woodlands and allotments provide habitat for wildlife, beauty to lift our spirits and invisible support for our immunity through plants' airborne microbes and volatile oils.

In 2014 the Food and Agriculture Organisation of the United Nations reported that, of about 100,000 edible plant species, just three (maize, wheat and rice) supply the bulk of humans' protein and energy needs, with 95% of the world's food energy needs being supplied by just 30 plant species. This is contributing drastically to reduced use and eventual loss. We need wild foods for their richer nutrients, microbiota and medicinal value.

Promotion of Underutilised Indigenous Food Resources for Food Security and Nutrition in Asia and the Pacific (FAO 2014) http://www.fao.org/3/a-i3685e.pdf

Ecosystems are a vital part of the urban green infrastructure providing drainage and pollution control, and contribute greatly to our economy, but the economic value of wetlands absorbing chemicals from water, microbes transforming waste into usable products, trees and plants cleaning the air, or green spaces reducing healthcare costs is often ignored in policy development.

Genetic diversity prevents diseases and helps species adjust to changes in their environment. Many medical discoveries, to cure diseases and lengthen life spans, were made through research into plant and animal biology and genetics.

Every time a species becomes extinct or genetic diversity is lost, we lose the potential source of a new vaccine, drug or plant medicine.

No other feature of the earth has been so dramatically influenced by man's activities. By reducing biodiversity, we strongly affect human wellbeing and the wellbeing of every other living creature.

Refs https://www.nwf.org/Wildlife/Wildlife-Conservation/Biodiversity.aspx

https://www.biodiversitywales.org.uk/What-is-Biodiversity-

The Importance of Green Space

Only half of people in England live within 300 metres of green space and the amount of green space available is expected to decrease as urban infrastructure expands. The health benefits of green spaces include:

- spaces for physical activity to offset illnesses associated with sedentary urban lifestyles, which are an increasing economic and social cost;
- better mental and physical health;
- the risk of mortality caused by cardiovascular disease is lower in residential areas that have higher levels of 'greenness';
- there is evidence that exposure to nature could be used as part of the treatment for some conditions;
- crime tends to be less in green space areas;
- people tend to feel less lonely when living near green space.[1]

There are challenges to providing green spaces in urban areas, such as the increasing competition for space to establish parks and how to fund both their creation and maintenance. Biodiversity within the green infrastructure setting gives good value since the effects on health can decrease NHS costs.

The Economic Value of Biodiversity

Edinburgh City Council found that for every £1 invested it returned £12 in social, environmental and economic benefits.[2]

See also The Economics of Ecosystems and Biodiversity: http://www.teebweb.org

There are challenges to providing green spaces in urban areas, such as the increasing competition for space to establish parks and how to fund both their creation and maintenance. Biodiversity within the green infrastructure setting gives good value since the effects on health can decrease NHS costs.

1.2 Threats to biodiversity

Extinction is a natural part of life. Most of the species that ever existed gradually went extinct because of natural shifts in the environment over long periods of time, such as ice ages. But today, species are going extinct at a dangerously fast rate, largely due to non-natural environmental changes caused by human activity, particularly our economic and population growth. Every species lost means that biodiversity is weakened, including:

- habitat loss/ degradation, e.g. nectar for bees, caterpillars for blue tits;
- over exploitation, such as overfishing;
- spread of non-native species and diseases;
- climate change;
- pollution and pesticides.

Extinction Today
(State of Nature UK report 2016)

https://www.nwf.org/Wildlife/Threats-to-Wildlife/Disease.aspx

http://www.globalissues.org/article/171/loss-of-biodiversity-and-extinctions

1.3 Consequences of biodiversity decline

No one knows the result of this extremely rapid extinction rate, although the impact on processes such as crop pollination is well documented. The ecosystem has been kept in balance through complex interaction between a huge number

of species. This rapid extinction may, therefore, precipitate global collapses of ecosystems like **agriculture,** threatening food supplies to hundreds of millions of people. This ecological prediction does not include the effects of global warming which will further aggravate the situation, reducing the planet's resilience to fires, floods and other natural disasters.

"If we don't do this, the web of life collapses"

Respondent to the H&F Biodiversity Survey, 2017

1.4 Biodiversity in Hammersmith & Fulham

As a densely urbanised inner London borough, little remains of Hammersmith and Fulham's original natural ecosystem complexes. Despite this, many quality wildlife habitats exist along the Borough's waterways and rail tracks and within its parks, cemeteries and community gardens where these are not over-manicured. Wormwood Scrubs is our largest green space and the River Thames and the Grand Union Canal also form two important 'blue' wildlife corridors.

A total of 225 hectares of green space was identified in the Borough, which constitutes 14% of its surface. More than 60% of green space (150 hectares) comprises formal parkland, sports pitches, and amenity grassland. The rest is mainly grassland (30 hectares) and herbaceous communities (18 hectares). Only around six hectares of native woodland remains in the entire Borough. An up to date study is required to inform future policy.

"If we lose what little biodiversity H&F has left it will be lost to future generations for ever"

Respondent to the H&F Biodiversity Survey, 2017

The Borough's housing estates have a mix of both hard and soft external surfaces. The large and small estates contain some 4,000 trees of varied species. There is potential to improve local biodiversity, surface water management, and air quality through improvements to both the ground level surfaces, and to the footprint of 45,000sqm of flat roofed buildings managed by the Council.

The Borough's streets are lined with approximately 9,000 trees. The traditional species, like London planes and limes - a legacy from the first wave of planting in the late 19th century and early 20th century - account for some 2,000 trees. The remaining 7,000 are comprised, predominately, of the smaller ornamental species such as cherry blossom, rowan, pear and whitebeam trees.

The larger species, chosen for their ability to tolerate the heavily polluted air from industry and coal fires and regular pollarding, now make the largest contribution to canopy cover. This cover is an important factor in mitigating the effect of urban heat islands and extreme rainfall events.

Best Practice example: Ealing Council, Winner London in Bloom's 2017 Biodiversity Discretionary Award 2017

Some of Ealing's key achievements in 2016-17

- New meadows created on 100,000m2 of open space in 2016-17, with a further 200,000m2 planned for 2017-18
- 760,000 bulbs planted
- Creation of four new orchards
- Completed four 'grey to green' projects
- Created four new swales in parks with drainage issues
- Three roundabouts cleared of over-mature shrub beds and seeded with meadow plants
- 250 bird boxes and 153 bat boxes installed in parks and conservation areas
- 20,000 trees planted in parks and open spaces, in partnership with Trees for Cities
- Over 2km in native hedgerows planted since 2013

2. Planning Policy and Practice

The Commission recognises the need to raise awareness of biodiversity among decision-makers, strategic planners, development planners and developers. There needs to be a unity of purpose to enhance and maintain biodiversity in the capital in keeping with the Mayor of London's aims and also the aspirations of Government as set out in their various POSTnotes. Local authorities are, by law (section 40 of the Natural Environment and Rural Communities Act 2006), responsible for conserving biodiversity, which includes restoring or enhancing a population or habitat, in exercising its functions.

2.1 The London Plan

The Commission welcomes the Mayor's endorsement of the importance of the environment and welcomes his consultation on the London Environment Strategy. We particularly endorse his aim to make London a National Park City and his pioneering of a capital accounting framework for the natural world within London. By revealing the economic value of public parks and green spaces within the London area it will demonstrate their worth to all decision makers, making it easier to justify investment in them.

"Every pound invested in parks and nature reserves contributes £30 towards health and wellbeing benefits and £23 towards crime reduction and community safety."

The Land Trust, January 2016

2.2 The Local Plan

It is the view of the Commission that Hammersmith and Fulham Council needs to make biodiversity a priority in setting out planning policy. The Local Plan, which is the strategic planning policy document produced by the Council, must recognise the many values that biodiversity brings to the environment in shaping planning policies and seeking to ensure that developments take account of the need to enhance biodiversity in the Borough.

To ensure this objective is achieved Commissioners believe planning policies should be strengthened to ensure existing green space is protected and suitable and sufficient green space accompanies new developments. Too often the wording of policies is not sufficiently robust or encompassing. Greater clarity would both improve the environment and reduce the

lead time to development by preventing costly disputes about the nature of development.

The Commission also believes there is scope to create new habitats by closing streets or parts of them, particularly where schools are located beside parks. This would also reduce pollution and improve child safety.

The scale of garden loss within the Borough and the impact this is having on biodiversity is a major concern of the Commission. We fully appreciate that central government planning policy limits the Council's ability to stop this development but believe there are initiatives open to the Council to mitigate the overall decline in the Borough's garden footprint.

The Commission believes it is essential that the Council first determines the scale of historic garden loss within the Borough and that it continues to monitor this decline. Such information will allow mitigating policies to be formulated as well as inform central government decision-making in the hope that policies will be introduced to prevent/reduce future garden "grabbing".

There are also residents who feel passionately about protecting their gardens for future generations. The Council could facilitate such action by promoting a scheme which would allow householders to covenant their gardens by providing a template and legal advice.

A more ambitious scheme would involve creating protected garden areas - *"Sites of Special Garden Interest"* - within the Borough in which garden development would be prevented and incentives provided to enhance gardens to improve their biodiversity. Such a scheme would be easier to implement with central government support as it would give the Council greater authority (through extending the Wildlife and Countryside Act to include urban gardens, or by establishing completely new legislation for urban gardens) and allow it to tap into central government funds.

Recommendations

For action by Government and national bodies

1. Tenets of EU Environmental legislation to be maintained undiluted post Brexit, in particular those of the Bird and Habitat Directives and the Natura 2000 ecological network of protected areas this legislation supports.

2. Government to extend the Wildlife and Countryside Act to enable designated garden areas to be established in inner City areas to enhance biodiversity, or to create new legislation specifically for this purpose.

For action by the GLA and regional bodies

3. The Mayor of London is urged to progress his proposals to make London a National City Park.

For action by the Council

4. Planning policies to be made clearer and more robust to ensure the footprints of existing valuable green spaces are maintained and that suitable green space accompanies all new developments

   (a) All commercial and residential development, including householder extensions undertaken within permitted development rights, to provide green space on a 1:1 basis at the very least.

   Such a policy enshrines the Council's objective and, at the same time, recognises that green roofs and walls would not provide a total solution in major housing developments. Commissioners recognise that further discussion is required with the Council regarding the definition of a large housing development and the ratio of 70% of green open space at ground level. Commissioners advise that green wall infrastructure should be built into walls. Plastic frameworks which can be draped down walls should not be recognised as green walls for planning purposes.

(b) Development to be confined to existing building footprints in all open green space in Hammersmith and Fulham.

For the avoidance of doubt this includes green space of Metropolitan, Borough wide and Local importance, as well as allotments. There should be zero tolerance to any encroachment into green space - this is a heavily populated Borough. "Salami slicing" of green space to accommodate development is taking place (witness the recent Hurlingham Club planning application). Repeated small incursions into green space to accommodate development over time will seriously reduce the footprints of the Borough's green space. Green roofs and walls provide some mitigation but it is only mitigation. If development is to take place, it must be on existing building footprints.

(c) To ensure maximum tree planting flexibility, all proposed cellar/lower ground floor extensions in existing properties must not protrude beyond their ground level footprints, similarly, cellars in new housing developments.

This policy will ensure that additional impediments are not presented to tree planting in existing streets and give maximum flexibility for tree planting within new housing developments.

(d) All commercial house builders required to show in their landscape strategy reports for planning applications, how they intend to improve their development sites for pollinators.

The government introduced the National Pollinator Strategy in 2014. As a voluntary initiative few developers take it into consideration when landscaping. Creating initiatives to improve habitats for pollinating insects will also help the bird and mammal populations.

(e) All developers to seek information from Greenspace Information for Greater London (GIGL) to better understand baseline conditions when preparing their baseline reports for planning applications.

Research conducted in 2016[3] by the Greater London Authority (GLA) shows that approximately 18% of planning applications have the potential to impact adversely on nature in the capital and that only 1% of applications are informed by a data search from GIGL. This implies that Local Authorities are not being correctly informed about baseline conditions and that inadequate measures are being taken to maintain biodiversity when development is taking place.

(f) Governance improvements required to ensure the Council receives impartial advice when seeking second opinions on the size of green space and affordable housing allocations in new housing developments.

Large housing developers often attempt to avoid implementing local plan commitments on green space and affordable housing allocations. Councils seek second opinions from outside consultants but often these consultants are working/or have worked for the developers through other subsidiaries. This means there are conflicts of interest. To avoid such conflicts, the Council should ensure any consultant appointed to give a second opinion on these matters should not have worked for the applicant developer in any capacity, for the last five years.

5. Suitable streets or sections of them to be closed where schools are located opposite public parks and converted to natural habitats. This could be done in conjunction with SuDS schemes.

Closing strategic streets will create additional habitats as asphalt can be replaced by shrubs, lawn and even vegetated swales. This policy will also improve air quality and safety for school children and could be linked in with SuDS schemes. South Park, for example, presents two opportunities as there are schools on opposite sides of the park: The Fulham Bilingual on Clancarty Rd, (London, SW6 3AA) and Thomas's School, Hugon Road (London SW6 3ES). Also Phoenix School and Cambridge School adjoin Wormholt Park. Consideration should also be given

to closing sections of roads where housing estates face public parks, for example, a section of Broomhouse Lane which separates the Sullivan Court Estate from Hurlingham Park – preferably closer to the Sullivan school end.

6. The Council to take a more active role in preventing building developments in gardens and in promoting diversity within gardens.

   (a) H&F to undertake a study of the decline in garden green space within the Borough since 2000 using aerial photographs and knowledge gained through planning applications and to continue to monitor this decline on a yearly basis.

   The Commission recognises that central government policy on permitted development rights makes it difficult to stop garden development but that it is important to understand the scale of the decline in garden green space as a precursor to policy formulation for initiatives to mitigate the impact and to inform central government. To enable the Council to more easily monitor garden consumption in the future, all householders proposing developments, either within permitted development rights or via a formal planning application, should be required to notify the Council of the garden area to be consumed by development and the nature of that land being displaced - garden or hard surface/ artificial surface.

   (b) The Council to assist householders to covenant their gardens to prevent development.

   The Commission recognises that the Council has limited powers to restrict development in gardens due to central government planning policy but believes it should exercise the power it has to help residents to preserve their gardens for future generations. One way in which this could be achieved would be to provide information or a "tool kit" to enable residents to covenant their gardens to prevent development. The covenant would be registered with the Council as well as with property deeds.

   (c) H&F to pioneer an initiative to designate areas of the Borough: *"Sites of Special Garden Interest"*.

   Again, this is an initiative designed to preserve gardens and provide oases of green within an urban context in a similar manner to Areas of Outstanding Natural Beauty (AONB) and Sites of Special Scientific Interest (SSSIs) in the countryside. Preferably the Council should be supported by central government legislation – either extending the Wildlife and Countryside Act to include urban gardens, or by establishing completely new legislation for urban gardens. This would make it easier to implement such an initiative and allow H&F to tap central government funds to execute such a scheme.

3. Greening Policy and Practice

3.1 Parks, Open Spaces and their Interconnections

The Borough has 61 green spaces including some good quality parks. 13 of the green spaces have green flag awards. However, the Borough faces many pressures that are relevant to biodiversity - increased population, increased pollution and declines in central government funding, but there is also a highly relevant social change. As society becomes more urbanised, wealthy and technologically sophisticated, it is becoming increasingly divorced from nature and does not "see" the relevance of biodiversity. This is one of the major challenges the Council faces as a successful biodiversity strategy depends on *"buy-in"* from local residents.

"We look after nature, we look after mankind"

Respondent to the H&F Biodiversity Survey, 2017

Parks, commons, greens, cemeteries, allotments, private gardens, housing estates, road verges, waterways, industrial estates and the interconnections between these and other natural features play a major part in supporting the Borough's biodiversity – but it will take a concerted effort by all stakeholders for improvements to take place.

(a) Green Corridors

Green corridors are a feature of landscape that allows organisms to move across landscapes. They are particularly important to small animals that find protection for cover as they move. The banks of water features act as green corridors for non-aquatic species. Railway embankments form a similar function. These are potentially long distance features. On a smaller scale, hedges and street trees provide this in a more local manner. Rows of houses with gardens also provide green corridors. All these provide a pathway for organisms to move under protection of cover and in a habitat that provides shelter and food.

(b) Parks and Commons

Parks are an important source of biodiversity but they face growing pressures. Existing parks are being required to accommodate more children for sports events due to the lack of sizeable green space in new housing developments, while central government funding cuts to councils have led to reduced spending on parks and shortcuts

with their maintenance. In particular, shrubs are being over-pruned and rubbish-laden compost strewn too heavily under trees and shrubs to reduce maintenance, causing the death of some shrubs. Often there is no budget to replace these shrubs and, when there is, there is reluctance to plant as it means additional maintenance.

Regulation has also gone too far – shrubs/hedges have been emasculated in order to reduce anti-social behaviour but the balance is not right. There are virtually no intact hedges in parks or gardens of council housing estates and similarly few shrubs above chest level height. This, coupled with the loss of garden space discussed in 3.2, has resulted in a very severe decline in habitat area and variety in the Borough and has contributed to the fall in small bird populations in inner London.

"The full-throated dawn chorus has disappeared"

Respondent to the H&F Biodiversity Survey, 2017

Meanwhile contractors spend a great deal of time dispersing and collecting leaves from parks. This over-concern with cleanliness reduces invertebrate numbers by depriving them of leaf habitat for over-wintering, leading to fewer bird numbers as they are deprived of a food source. It is also a possible contributory factor in the dramatic decline in hedgehogs.

But, given the will, much can be done to rejuvenate the parks through more sensitive pruning, changes in the nature of planting and by setting aside areas which can be left to grow wild or be used to create Ecology Gardens with wildflower areas and ponds (see Habitats for Wildlife in 3.5). There are also parks and commons with disused asphalted areas that could be replaced with vegetation and opportunities to reduce the surface areas of hard standings for sports grounds.

There have been various initiatives put forward over the years to replace grassed areas in parks and commons with Astroturf/artificial grass surfaces, although most have been unsuccessful. The Commission would like the Council to ban the replacement of grass surfaces with Astroturf/artificial grass in all open spaces, with the possible exception for use on cricket pitches, between the wickets, and in small children's play areas. Should existing asphalt sports surfaces be replaced with Astroturf, every effort should be made to establish whether the area of hard surfacing could be reduced, as has been successfully achieved in South Park.

Wormwood Scrubs deserves separate comment given its size. It is Common Land and has special protection under the Wormwood Scrubs Act 1879. It is also Metropolitan Open Land and parts of it are a Local Nature Reserve. It currently has several uses: sports, local nature reserve and a historical role of military training ground. The advice from the Open Spaces Society is that where common land has not been made into a formal park, it should be retained in its more natural state. The Commission is concerned that attempts will be made to turn part or all of the Common into a park in the future, and urges the Council to retain this Common in its natural state.

Our main concern is the potential effect of the proposed redevelopment of the railway land south of the canal on the Scrubs. The designated nature reserve, the main habitat of the common lizard and ground nesting birds, Meadow Pipit and Stonechat, is close to the boundary of the redevelopment area. Access from the redevelopment site to the Scrubs will need careful management to maintain habitat variety and biodiversity. It should be possible to direct access to the east where the sports fields are and to plant more trees or hedges to protect the Local Nature Reserve area.

The railway embankment to the north of the Scrubs is a major site for biodiversity and should be retained. It has a very high boundary permeability into the Scrubs and so enhances to ecological value of the local nature reserve areas adjacent to it.

The impact of moving Queen's Park Rangers to the Linford Christie stadium site is unknown.

We are very concerned about the impact of the building footprints and the sheer number of people at football matches on wildlife. This is the largest area for wildlife in the Borough by a wide margin. It should be preserved as a wildlife site for future generations and the Commission seeks assurances from the Old Oak and Park Royal Development Corporation (OPDC) and Queens Park Rangers football club that the biodiversity of Wormwood Scrubs will be maintained or even enhanced during the period of development in the area.

We very much agree with The Hammersmith Society's concerns about the proposed OPDC development's effect on the Scrubs and with the submission by the Friends of Wormwood Scrubs to the consultation. In general, we endorse the description of the Scrubs as "more wild than tamed" and wish it to remain that way for the sake of its wildlife. In particular we are concerned about the numbers of visitors to the site, which is set to increase greatly and agree that "priority should be given to preserving its informal character rather than increasing hard-surface walking and cycling routes or attracting visitors from further afield." We endorse their rejection of the proposal for "new and enhanced access from Old Oak Common station and surrounds" because of the Local Nature Reserve on Wormwood Scrubs that would be disturbed, as we have mentioned in our report already.

The proposed sewer realignment, parallel to the railway, as part of HS2 works, is of concern, especially as in the current plan it would include a satellite construction compound right next to Chats Paddock .This would impact very heavily on this sensitive area for wildlife. We recommend an alternative plan be found. Also, if Crossrail and HS2 are put in place as currently planned, particular care must be taken to ensure that any new paths on the Scrubs avoid the nature reserve areas. Extra protection can be provided by planting more trees or hedges around them.

We agree that light pollution from multiple tall towers would also be detrimental to the wildlife on the Scrubs as well as the noise and disturbance while building work is in progress, and agree that new buildings must be set well back from the perimeter of all green spaces affected. The inclusion of ponds or scrapes could enhance biodiversity and also prevent flooding.

A fuller extract from the Hammersmith Society's response to the consultation is included in Appendix D.

Parks and other public green spaces offer wonderful opportunities for education about biodiversity. Plant walks led by foragers and others have burgeoned in the Borough through people hungry for plant stories, to learn how to identify plants, to eat and to use them as medicine. We should encourage this widespread desire to reconnect with nature, but it needs responsible management, including teaching about legality, when, how and when not to pick plants to protect biodiversity and respect Parks and heritage sites. Such responsible education should be encouraged by managers of Parks and botanical heritage sites such as Fulham Palace.

(c) Cemeteries

Cemeteries provide a variety of habitats and maintain considerable biodiversity. The Borough has two public cemeteries (Hammersmith and Fulham (Margravine) and two private cemeteries (St Mary RC and All Souls, Kensal Green). All church grounds in the Borough were closed to burials in the 19th century, although Margravine is now, once again, accepting internments. They are considered to be public open space and are listed as such by the London Parks and Gardens Trust.

The way in which cemeteries are managed varies, so the spread of habitat ranges from being similar to that of formal parks to good quality secondary woodland, while the manner in which the public behave in cemeteries means they are often quiet and less visited so provide habitat for species that would not be at ease in a busy park.

There are nonetheless challenges to improving biodiversity within cemeteries as some residents consider an overgrown or wild cemetery denotes lack of respect and neglect. The Commissioners believe that better information is the key to improving biodiversity within cemeteries, combined with judicious mowing around gravestones in cemeteries where there are

resident concerns. Information boards should be in all cemeteries outlining the biodiversity objectives of the cemetery or its Friends.

Margravine Cemetery is a model example of how a cemetery can be enhanced to maximise its biodiversity and its attractiveness to residents through having a committed group of local volunteers.

(d) Allotments and Community Gardens

Allotments are another special habitat. There is only one major site in the Borough, Fulham Palace Meadow Allotments, which has 406 plots. They add to biodiversity in the Borough due to the variety of plant/food species grown, but there is scope for improvement as herbicides and pesticides are still being used inappropriately.

Community gardens within parks also have a role to play in enhancing biodiversity and resident participation but, again, education is required to moderate and, ideally, prevent the use of pesticides and herbicides.

"Important to biodiversity are the LBBs – little brown bugs, little brown birds and little brown bacteria"

John Goodier, Biodiversity Commissioner

3.2 Gardens

Gardens can contribute enormously to biodiversity through the variety of vegetation and microhabitats they support. There is enormous variety in the composition of the Borough's gardens, ranging from those attached to substantial detached houses, to smaller gardens linked to terraced housing and the gardening in pots on balconies. Most of the houses in the Borough are terraces, having small back gardens and even smaller front gardens.

The worrying factor is the decline in the overall Borough garden footprint. The trend to concrete over front gardens to accommodate cars and/or reduce maintenance continues, as does the desire to increase living space by extending into back gardens. Anecdotal evidence suggests that this decline has accelerated since householder permitted development rights were liberalised and stamp duty increased.

The decline in the garden footprint is having a profoundly negative impact on biodiversity within the Borough as the total habitat for flora and fauna has declined. Further, losses in biodiversity can be attributed to residents concreting, decking or Astroturfing their back gardens and embracing exotic ornamental plants which have little or no biodiversity value.

The Commission appreciates that the Council has limited power over garden development due to central government planning policy but believes that there are initiatives it can take to help mitigate the garden decline. First, an informed assessment of the shrinkage of the Borough's garden footprint must be undertaken and this must continue to be monitored on an annual basis (see Planning Policy and Practice).

As we pointed out in "Planning Policy and Practice" we believe there are measures which the Council could implement to improve garden biodiversity, such as facilitating the covenanting of gardens, spearheading the creation of designated protected garden areas. The Council could also launch a public "Grey to Green" campaign to encourage residents to re-green their gardens.

In addition, we believe that education plays an important role in changing behaviour. Many householders are unaware of the importance of different plant species for pollinators and welcome knowledge of appropriate planting. The Council could access a brochure on planting for pollinators which could be published on its website and sent to all householders with their council tax bills.

3.3 Industrial and Housing Estates

Industrial estates are not normally associated with biodiversity given the absence of green space, but abandoned estates/brownfield sites can have considerable diversity (bats, foxes and plant species that are pollinator friendly) although not all of it is welcome to everyone. Buddleia, which often grows on these estates, is excellent habitat for butterflies while other pollinator friendly "weeds" such as dandelion and bramble, which support bees, are also common on these sites.

As we outlined in the previous section, any site proposed for development should be informed by biodiversity information provided by Greenspace Information for Greater London (GIGL) to better understand baseline conditions.

The Commission believes that combining better information with a policy to ensure green space is given equal weight to the building environment in planning terms, will considerably improve biodiversity in the Borough (see Planning Policy and Practice section).

In industrial estates, greening could be achieved through green roofs and walls and better tree planting, should scope for creating green open space be unavailable. In large housing developments (say 50 plus dwellings) at least 70% of the green space must comprise ground level non-paved open green space to ensure there is adequate recreation ground for residents as well as enhancing biodiversity.

Established private housing estates can be over-manicured and their green space dominated by plant and tree species which support little biodiversity. Often this reflects the landscaping policy of the original developers of cutting costs by choosing low maintenance species and achieving economies of scale by bulk purchasing, but better public education could result in more intervention in favour of biodiversity by residents.

In the main, council housing estates are subject to many of the pressures faced by public parks, as described under 3.1, but there are notable exceptions, in particular the greening of the Queen Caroline Estate in Hammersmith. This is an outstanding blueprint for the rest of the Borough as it demonstrates how a sustainable drainage system (SuDS) scheme can be combined with resident participation to produce a win-win situation for both residents and the environment.

3.4 Green and Blue Corridors

The Grand Union Canal runs through the Borough within the Old Oak and Park Royal Development Corporation (OPDC) area. The redevelopment of the area provides an opportunity to add to the variety of plant species, and hence animal species. There are examples of reasonable good practice in the Ealing parts of the OPDC. Much of the water in the canal in this area is derived from the Colne River and the Frays (a manmade water course) and is of good quality. It supports a large fish population, which is only visible during angling competitions. The canal is part of a 26 mile spread of lock free water and connects to a 2200-mile system in England and Wales.

The River Thames is the other main blue corridor. As a tidal river it provides a variety of habitats from permanently watered river to an area of land-based plants that tolerate tidal inundation. Much of the Thames in the Borough is mud flats. It is an interesting accident of history that the Borough is geographically defined by the two rivers, Counters Creek and Stamford Brook, and yet has no natural flowing water within its borders. The Commission believes there is considerable scope to green the footpaths running along the Thames and to provide wildlife friendly river banks as development offsets.

3.5 Habitats for Wildlife

In the past the Borough has planted a wide variety of plant species and that has made a contribution to biodiversity. Native species are important to those organisms that have co-evolved with them. Non-native species are not as useful to native small species which have very specific requirements. Ornamental varieties of plants are often bred to have showy flowers where reproductive parts are replaced by additional petals. As a result, they often have few if any nectaries, little or no pollen and do not set fruits or seeds. All these features reduce available food for animals. Bees that are essential to the production of many fruit and seed crops (e.g. plums) are maintained outside the flowering period of these crop plants by other sources of pollen and nectar. To maintain biodiversity, it is necessary that the flowering and fruiting of plants is spread as widely as possible over the year.

Biodiversity is encouraged by the structure of the habitat. Leaving parts of grass areas to grow tall encourages biodiversity by increasing the variety of habitats and by providing food. Where it does not conflict with the use of parks for sports or picnic areas, grass should be mown less frequently. Underneath mature trees would seem a suitable place; not only will it provide habitat but it could reduce compaction and thus improve the growth of the tree. We are aware that some people see this as untidy; an alternative would be to grow annual or perennial flowering meadows which mainly consist of colourful flowering plants, and would in themselves increase biodiversity.

Hammersmith & Fulham has 9000 street trees and 4000 trees on its housing estates. This number would be considerably higher with park and garden trees and all others included. Ravenscourt Park alone has 600 trees and more are being planted in the Borough each year.

The trees are of a variety of species. The many large plane trees that were planted over 100 years ago have minimal biodiversity value, though they do provide good canopy cover and some protection against air pollution. Many streets are lined with lime trees which support more species of invertebrates. Other street trees tend to be smaller and often ornamental. Pink hybrid double-flowering cherry trees and Himalayan birches are popular and beautiful, but do not have biodiversity value. Some streets are lined with rowans, which support 28 species of invertebrates and provide food for birds. They look lovely when in berry, but rarely survive more than 20 years, so are not a very sustainable option on streets, but could probably survive better in parks. Other trees locally include silver birches which support over 200 invertebrate species, alders which support 90 such species, and hornbeams which support 28 species.

The parks have a wide variety of trees including large exotic ones which for this reason are not best for promoting wildlife. There are very few oaks, which are the best tree for biodiversity. They support around 300 or more invertebrate species and can live up to 500 years, occasionally double that! They require a lot of space for their roots to spread, so are not suitable as street trees. However, the Council's current tree officer is keen to plant them wherever possible. They could be suitable replacements when the large exotic trees die. Willow trees also have an exceptionally high biodiversity value and could be planted more in our parks, including pussy willow, which attracts pollinators.

"What's good for bugs is good for you"

Respondent to the H&F Biodiversity Survey, 2017

Hedges are a great nesting habitat for birds and provide homes for hedgehogs and invertebrates. But many of the hedges in the Borough's green spaces are just of one species, such as beech or holly. They would support more wildlife if they were made up of a mixture of native species. This is true of the hedges on Wormwood Scrubs, including one that was planted within the last 10 years. Unfortunately, the wildflowers that were planted next to it have not survived well, apart from teasels and thistles which goldfinches love. Hedges have also been over-pruned, which means they do not have the critical mass to provide food and shelter for birds and invertebrates.

As regards other flora, there are places on housing estates and in some parks where wildflowers have been planted and grasses have been allowed to grow longer to support pollinators and other invertebrates such as grasshoppers and lizards. The wildflower patches have not always been well maintained (e.g. Ravenscourt Park nature garden) and some of the long grass has been mown short in response to residents' complaints. The lack of understanding as to why it's necessary to have well joined-up wild spaces to support wildlife could be addressed with more signage and explanations. Perennials that support pollinators, herbs and wildflowers require less maintenance than formal arrangements of bedding plants that don't support wildlife, and would, therefore, reduce costs. Generally, there is a need for more planting for pollinators in the Borough to protect bees, hoverflies, butterflies and moths from declining even further than at present.

"Fewer wildflowers – no poppies!"

Respondent to the H&F Biodiversity Survey, 2017

Given the Borough's lack of open water, ponds, both formal and informal (including pond dipping sites) are an important contributor to biodiversity by providing wetland habitats. Very few of H&F's green spaces have them though they attract a lot of attention from park visitors, especially those with children. The larger ones provide habitat for water birds including swans, ducks, geese, herons, coots, moorhens and gulls and are found in Bishop's Park, Ravenscourt Park and Hammersmith Park. The smaller ones, like those in Ravenscourt Park nature garden, Phoenix, Godolphin and Lena Gardens and South Park Ecology corner, provide habitat for smaller pond creatures including frogs and toads.

An unknown number of people have such a pond in their gardens but almost every green space would be richer in wildlife if it included a small pond, or in the case of Wormwood Scrubs, a larger one or several smaller ones. Frogs and toads eat slugs and snails, so are beneficial to gardeners, and ponds judicially placed can also help to prevent flooding. This is important in the case of Wormwood Scrubs, to prevent run-off onto Wood Lane. Ponds in urban public places need to be inside an enclosure for health and safety reasons, and also need to be maintained properly in order to continue to support healthy wildlife. The pond in Ravenscourt Park nature garden is currently lacking attention but, nevertheless, has a constant stream of children visiting it when there are tadpoles.

Recommendations

For action by the GLA, the Corporation of London and the OPDC

1. Herbicides and pesticides to be banned in all public spaces and where exceptions are necessary to control invasive species such as Japanese knot weed, glyphosate based pesticides to be used only on a cut-and-paste basis.
2. Artificial grass/Astroturf to be banned in public green spaces other than for use to replace existing asphalt sports surfaces, with the possible exception for use as cricket pitches between wickets.
3. Efforts to be made to reduce hard standing footprints of sports grounds in parks and commons.
4. Assurances should be given by the OPDC that the biodiversity of Wormwood Scrubs will be maintained throughout the development of the Old Oak and Park Royal site. Specifically, points of access and the use of the Common should be managed to protect the wildlife. Play equipment areas should be on the periphery of the sports pitch area and outdoor gym equipment should be near the street workout structures north of the Linford Christie Stadium.
5. Proper consideration must be given to the biodiversity value of Wormwood Scrubs, Mitre yard and North Kensington Gate, and especially to those parts which are designated as a Local Nature Reserve. In particular this means:

   (a) Keeping the area "more wild than tamed", and consulting all the wildlife surveys of the site, including that of Leanne Brisland in 2015, and that of the London Wildlife Trust in 2016, before commencing any development close to the green spaces.

   (b) Ensuring that new high-rise buildings are sited well away from the perimeter of the site, because of light pollution.

   (c) Not allowing new access to the site anywhere near the Local Nature Reserve. We also recommend that an alternative plan should be found to the proposed sewer realignment as part of HS2 works because of the heavy impact it would have on a sensitive area for wildlife.

   (d) Providing green spaces in the new developments to prevent over-use of Wormwood Scrubs by the greatly increased numbers of local residents.

   (e) Rigorous assessment of the probable impact on wildlife, before any decision is taken to move Queens Park Rangers to the Linford Christie stadium site.

   (f) The railway embankment to the north of the Scrubs is a major site for biodiversity and should be retained. It has a very high boundary permeability into the Scrubs and so enhances the ecological

value of the local nature reserve areas adjacent to it.

For action by the Council

Significant weight should be given to the biodiversity aspect of trees in all planting situations. This means, for example, more oaks, willows, silver birches, pink/white hawthorn, rowan and alders and fewer exotic trees or double-flowered cherries in future planting.

1. Hedges in all planting situations to include a greater variety of native species.
2. All parks, commons and cemeteries to support "wild" areas, where possible, including ponds to promote biodiversity - with improved signage to increase understanding and public acceptance.
3. Parks and other public spaces to be re-vegetated to compensate for the loss of vegetation caused by over-pruning, disease, vandalism and old age.
4. Large expanses of asphalt in parks/ commons, such as the area near the Effie Road entrance of Eel Brook Common, to be replaced with lawn, shrubs or wild flower meadows.
5. Enshrine good practice protocols – pruning, mowing, for example, pruning of shrubs limited to 50% of the shrub cover in any one year and any pruning not to be severe, and 1 in 3 street trees at a time (as recommended in the Air Quality Commission report).
6. Herbicides and pesticides to be banned in all public spaces and where exceptions are necessary to control invasive species such as Japanese knotweed, glyphosate based pesticides to be used only on a cut-and-paste basis.
7. Artificial grass/Astroturf to be banned in public green spaces other than for use to replace existing asphalt sports surfaces, with the possible exception for use as cricket pitches between wickets.
8. Efforts to be made to reduce hard standing footprints of sports grounds in parks and commons.
9. The Council to access a brochure on planting for pollinators to be published on its website and sent to all householders with their council tax bills.
10. The Council to promote a scheme to green gardens called "From Grey to Green" and to sponsor an annual award for the best transformation.
11. The Council to ensure the Biodiversity Commission's recommendations are incorporated in the work towards the re-tendering of a new Grounds Maintenance contract in 2021, and that biodiversity is a key deliverable in this contract. This should involve basic training for the workers on gardening for wildlife.
12. The railway embankment to the north of the Scrubs is a major site for biodiversity and should be retained. It has a very high boundary permeability into the Scrubs and so enhances the ecological value of the local nature reserve areas adjacent to it.

4 Putting People at the Heart of Biodiversity

4.1 An Ecology Centre and Ecology Officer

We think the most visible and accessible way to increase people's understanding and involvement with biodiversity would be for the Council to create an Ecology Centre in or near one of the parks in the Borough. We would not want this to encroach on any of the areas that provide habitat for wildlife though! Perhaps it could be housed in an existing building. It could be a source of inspiration as well as being a resource centre for educational projects to increase understanding of how biodiversity works, and volunteering projects connected with creating more habitat for wildlife. It could also be the base for designing more signage and beautifully illustrated boards to inform people about the habitats that are being created and improved for wildlife. The ecology officer would play a crucial role in making it functional, together with assistants and volunteers.

4.2 Greenfest

Greenfest was an annual event in the Borough from 2004 to 2011, held in Bishop's Park, Parson's Green or Furnival Gardens in the summer. Stalls were run by local environmental and community organisations, with bicycle maintenance workshops, how to cycle safely, and much more. Unfortunately, the Council withdrew the funding. We would like it to be revived, including local 'green' business to showcase best practice. Commission members would play our part by providing education about biodiversity, including, for instance, how to make our windowsills and gardens more wildlife-friendly, and games or quizzes to engage young people. We would also use it to publicise a calendar of events throughout the year, such as nature walks and planting wildflowers or bulbs.

4.3 Schools

Urbanwise.London already works with 31 primary schools in the Borough on a range of environmental projects, including learning about biodiversity. Also, Hammersmith Community Gardens Association works regularly with 11 schools in the Borough including delivering gardening projects and volunteering sessions at the wonderful Phoenix School Farm. We would like this kind of work to be expanded to involve more schools and more students from each school. We would like biodiversity to be given a higher profile in local schools and for publicity to be provided to highlight how well the topic fits into the national curriculum's requirements. Outdoor education should be encouraged in

schools in order to connect young people with nature and their local environment, promoting health and wellbeing for students. The Ecology Officer would be well-placed to assist with delivering and expanding on outdoor education and advising schools on how to improve biodiversity within the school grounds.

4.4 Families and Informal Learning

Informal learning projects already happen in the school holidays in some of our green spaces, organised by Hammersmith Community Gardens Association (HCGA), and they are well-equipped to run projects involving hands-on education about wildlife. The proposed Ecology Officer and Centre would also increase the opportunities for informal learning, both at the centre and as outreach, delivering events and activities in other areas or educating, training and empowering others to do so. We would like this kind of work to be expanded, so that every family in the Borough could easily access one of these schemes, without needing a car to reach it. In addition to engaging the children, their parents are likely to become more interested in nature and biodiversity. The results of our Biodiversity Survey highlight the need to interest and engage more young people and adults under 40, and many people with young families fit this category.

4.5 Community Groups and Individuals

The proposed Ecology Officer, whom we consider essential to enable wildlife habitats to be increased and maintained, should involve existing community groups in these projects and provide support for groups to proactively improve their own neighbourhoods. This could be in the form of expert advice, education, training, signposting to fundraising sources, organising voluntary task days, for example litter-picking or planting, or providing links to other local environmental organisations who could help them to deliver these tasks, e.g. Thames 21, HGCA, Groundworks. There will be people in these groups who can be inspired to do this and who will in turn inspire others. The projects should be well-advertised in every way possible to encourage those who are retired, marginalised or socially isolated to get involved. In particular there are likely to be retired people who are seeking a sense of purpose in their new lifestyle, who would find gardening for wildlife fulfilling and a source of companionship.

4.6 Tenants' & Residents' Associations and Estates

The Council has done some admirable work on some estates, in collaboration with the residents, to make their green spaces more wildlife friendly, and to provide attractive playspaces for children at the same time. There is now more awareness about nature and biodiversity among those residents, and greater enthusiasm for it too. We would recommend that this kind of project be extended eventually to all housing estates in the Borough. The Ecology Officer, as stated more fully in 4.5 above, would be well-placed to provide support for these groups to pro-actively improve their own neighbourhood.

4.7 Businesses

There is much evidence that having green space, trees and flowers close to one's workplace improves health and wellbeing. This is reflected in a reduction in sick leave and better retention of staff. Many businesses find that providing a sensory and/or productive garden as a breakout space, for instance, is beneficial to the workers in terms of health and wellbeing, and thus increases the productivity of the business itself. We would therefore encourage businesses to provide and improve green spaces on their sites including planting trees.

Many businesses now engage in Corporate Social Responsibility (CSR) to give back to the community and environment in which they are based. We would urge local businesses, in particular medium and large businesses (>200 employees) to commit to one environmental improvement action day, for 25% of employees, per year in the borough. The Ecology Officer, as stated more fully in 4.5 above, would be well-placed to provide support for facilitating the CSR days by providing links for businesses to the relevant local organisations, community groups, individuals, Tenants and Residents Associations

to help them deliver these environmental improvements.

4.8 Hospitals and GP Health Centres

Every hospital or health centre should include a green space with medicinal plants and food and encouraging wildlife to provide and demonstrate the benefits of nature for our health and wellbeing. These gardens would not only bring people together to reduce isolation, but also provide a wonderful resource for learning how to eat, cook and use foods to support health, better manage chronic disease, and to treat minor ailments. Minor ailments are suitable for self medication but take up some 20% of GP consultations and 91% of these result in prescriptions, costing £38,000 per GP or £1.4bn overall per year. Leading examples of good practice are Bromley by Bow Health Centre, which has thriving gardening activities for wellbeing, and the Lambeth GP Food Co-op which transforms unused space in GP practices for food growing to build community-led health.

4.9 Response to H&F Biodiversity Survey

Earlier this year the Commission circulated a survey on biodiversity to the residents of the Borough. We were pleased to see that 251 residents responded to it. However, a high proportion of respondents were aged over 40, so clearly more work is needed to engage the interest of younger people.

Among those who did respond there was an overwhelming recognition of the importance of biodiversity, and many chose to explain why in passionate terms. This shows that there is strong support among residents for our work on the Commission, provided of course that our recommendations are carried out!

Many respondents also emphasised the need for more and better education about biodiversity, so that people will understand the need for wild spaces in parks and gardens, and more native trees that support wildlife rather than ornamental ones. The need to find alternatives to pesticides and herbicides was another common theme. Some respondents mentioned that the urgent need to improve air quality is at the same time an essential measure towards making our environment more wildlife-friendly.

When asked whether they had noticed a decline in wildlife in their area, perhaps the most haunting comment was "Full-throated dawn chorus disappeared". Not one respondent recorded seeing a hedgehog in the last 15 years. Another respondent said that the owls and sparrows have gone, and others that there are fewer starlings and swifts, ladybirds, stag beetles, bats and frogs, and fewer wildflowers: "No poppies". The full results of the survey can be found at the back of this report in Appendix D.

Recommendations

For action by the Council:

1. For the Council to appoint a permanent Ecology Officer and establish an Ecology Centre in or near one of the parks in the Borough. The Ecology Officer's role would be to ensure that ecology and biodiversity are given proper consideration in every aspect of Council policy and to set up and run an attractive Ecology Centre which would provide a focus for the public to become more interested in nature and biodiversity. This could be done with the help of assistants and volunteers. Part of the Ecology Officer's role would be to act as volunteer co-ordinator which would involve organising greening projects around the Borough, training and recruiting volunteers.
2. With the Ecology Officer in the lead, promote and encourage volunteering initiatives for environmental improvement in the Borough's parks and green spaces. This could involve Friends of Parks groups, Residents' and Tenants' Associations, existing volunteer groups and organisations and local businesses, as well as individuals of all ages who would benefit from contact with nature and a sense of purpose.
3. To sponsor the revival of Greenfest as an annual event.
4. To facilitate the expansion of outdoor education about nature with schools in the Borough. Also to enable Hammersmith Community Gardens Association to expand its work or a sister organisation to be formed which would enable more families to access informal outdoor learning in our parks and green spaces. We would like biodiversity to be given a higher profile in local schools and for publicity to be provided to highlight how well the topic fits

into the national curriculum's requirements. The Ecology Officer would be well-placed to assist with delivering and expanding on outdoor education and advising schools on how to improve biodiversity within the school grounds.

5. The proposed Ecology Officer and Centre would also increase the opportunities for informal learning, both at the centre and as outreach, delivering events and activities in other areas or educating, training and empowering others to do so. We would like this kind of work to be expanded, so that every family in the Borough could easily access one of these schemes, without needing a car to reach it. In addition to engaging the children, their parents are likely to become more interested in nature and biodiversity.
6. To eventually extend the excellent work the Council has done to make some housing estates more wildlife–friendly, to all the housing estates in the Borough.
7. The Ecology Officer, as stated more fully in 4.5 above, would be well-placed to provide support for these groups to pro-actively improve their own neighbourhood.
8. To continue to work on improving air quality in the Borough, as this is also essential to supporting the growth of biodiversity, and is important to many members of the public.
9. To encourage businesses to provide green spaces and trees on their sites, in the recognition that this will improve the health and wellbeing of their employees and consequently the efficiency of the business.

For action by the NHS:

10. To ensure that every hospital or health centre is a pleasant place to visit with green space, trees and flowers for pollinators and medicinal plants and foods to act as a resource for learning about nutrition, gardening, self care and promoting health. All new hospitals or health centres should include productive gardens, learning from best practice and social prescribing models.

For action by businesses:

11. Many businesses now engage in Corporate Social Responsibility (CSR) to give back to the community and environment in which they are based. If an employee spent 1% of their working year on CSR, this would equate to approximately 2 working days per year. We would urge local businesses, in particular medium and large businesses (>200 employees) to commit to a minimum of one environmental improvement action day, for 25% of employees, per year in the borough. The Ecology Officer, would be well-placed to provide support for facilitating CSR days by providing links for businesses to the relevant local organisations, community groups, individuals, Tenants and Residents Associations to help them deliver these environmental improvements.

Appendix A

The Commissioners

Morag Carmichael (Chair)

Morag coordinates the local Friends of the Earth group in H&F and has previously volunteered with environmental social charity Groundwork. She continues to volunteer with the Trees for Life project in Scotland and with forest school in various places around London. She has lived in H&F for 45 years.

Louise Barton

Louise's professional background is in finance, although earlier she qualified as an agricultural scientist. She has lived in Fulham for more than 30 years and is a committee member of the Friends of South Park. She is actively involved with a vegetable and herb garden where adults and children are encouraged to take an interest in gardening and nature.

Professor Derek Clements-Croome

Derek is an architectural engineer and a professor at Reading University and Queen Mary University London. He specialises in the design and management of intelligent buildings and cities focusing on health and wellbeing. He is a built environment expert for the Design Council and a Fellow of the Royal Society of Medicine. He is especially interested in biophilic design and making space for nature in buildings and cities to improve health and wellbeing of people.

John Goodier

John is a friend of Ravenscourt Park. He has a degree in agricultural botany and has a wide theoretical background. He helped to write a previous Biodiversity Action Plan for Hammersmith & Fulham. John organises the walks programme for the London Parks and Gardens Trust, and regularly writes about public openspace in their magazine London Landscapes.

Vanessa Hampton

Vanessa has worked in parks, allotments, horticulture and conservation project management for 15 years and is currently manager of Walpole Park in Ealing. She is also a committee member of the Friends of Wormholt Park and has lived in Hammersmith & Fulham for 14 years.

Alex Laird

Alex is on the Friends of Bishops Park committee and is a medical herbalist at Breast Cancer Haven in Fulham and Whipps Cross University Hospital. She has lived in Fulham since 1978. She runs the charity Living Medicine to revive knowledge in the safe use of plants and food as medicine, and create with the public a beautiful World Kitchen Garden visitor centre to link medicinal gardens around the world.

Dr Nathalie Mahieu

Nathalie is a Friend of Margravine Cemetery. She has a degree in geology and is a keen naturalist. She routinely surveys birds in Margravine Cemetery and the surrounding area, as well as insects. She has been monitoring the Peregrine Falcons on the roof of Charing Cross Hospital since 2007.

Cathy Maund

Cathy has worked for the Hammersmith Community Gardens Association for 32 years. HCGA work with a variety of schools, groups and volunteers. They have four sites in H&F: Ravenscourt Park glasshouses, Phoenix School farm, Godolphin Gardens and Lena Gardens.

Moya O'Hara

Moya has worked for Urbanwise.London (previously Hammersmith & Fulham Urban Studies Centre) for nine of its 34 years of existence. The centre mostly works with children and young people in London, especially Hammersmith & Fulham and its surrounding boroughs. The work focuses on learning about all aspects of the local urban environment including its wildlife, green spaces, the river and the canal.

Appendix B

References

Key Reports and Literature Reviewed

The key documents that formed the literature review are listed below with weblinks:

- Urban Ecology and Biodiversity in Hammersmith & Fulham http://democracy.lbhf.gov.uk/mgConvert2PDF.aspx?ID=84659&ISATT=1#search=%22Urban%20ecology%20biodiversity%22
- Biodiversity 2020: A strategy for England's wildlife and ecosystem service 2011 (Defra) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf
- City of London Draft Biodiversity Action Plan 2016-2020 (pdf) https://www.lbhf.gov.uk/sites/default/files/section_attachments/city_of_london_2016-2020.pdf
- GLA Housing Committee Scoping Paper June 2016: Promoting Biodiversity in New Housing Developments (pdf) https://www.london.gov.uk/moderngov/documents/s59849/05a%20Appendix%201.pdf
- Chartered Institute of Ecology and Environmental Management (CIEEM): Guidelines for Ecological Impact Assessment in the UK and Ireland (Terrestrial, Freshwater and Coastal) Second Edition 2016 https://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf
- The Natural Choice: Securing the value of nature, June 2011 (HM Government) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf
- Biodiversity: Understanding the Living World (EU Research, 2010) http://www.gppq.fct.pt/h2020/_docs/brochuras/env/eriaction_biodiversity_en.pdf
- The National Pollinator Strategy: for bees and other pollinators in England November 2014 (Defra) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/409431/pb14221national-pollinators-strategy.pdf
- Planning Guidance Supplementary Planning Document, July 2013 (H&F Council) https://www.lbhf.gov.uk/sites/default/files/section_attachments/planning_guidance_spd_final_tcm21-181716.pdf
- State of Nature UK report 2016 (RSPB) (pdf) https://www.rspb.org.uk/Images/State%20of%20Nature%20UK%20report_%2020%20Sept_tcm9-424984.pdf
- Zoological Society of London (ZSL) Lets Work for Wildlife Guidance Document: Conservation of Tidal Thames Fish through the Planning Process (pdf) https://www.zsl.org/sites/default/files/media/2016-10/Tidal%20Thames%20Fish%20Guidance%20Document.pdf
- UN Environmental Programme: Global Environmental Outlook 4, Chapter 5 http://pardee.du.edu/sites/default/files/GEO-4_Report_Full_en.pdf
- UN Environmental Programme: Global Environmental Outlook 5, Chapter 5 http://www.unep.org/geo/sites/unep.org.geo/files/documents/geo5_report_c5.pdf
- Draft London Environment Strategy (GLA, August 2017) https://www.london.gov.uk/sites/default/files/draft_environment_strategy_-_executive_summary.pdf
- Hammersmith & Fulham Council Local Plan https://www.lbhf.gov.uk/planning/planning-policy/local-plan

- Report of the Hammersmith & Fulham Air Quality Commission (October 2016) https://www.lbhf.gov.uk/sites/default/files/section_attachments/212_56ds_report_of_the_hf_air_quality_commission_rev5.pdf
- Green Space and Health (POSTnote 538, 2016) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0538
- Creating Age-friendly Cities (POSTnote 539, 2016) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0539?utm_source=directory&utm_medium=website&utm_campaign=PN539
- Trends in the Environment (POSTnote 516, 2016) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-0516
- Biodiversity Auditing (POSTnote 490, 2015) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-490
- Urban Green Infrastructure (POSTnote 448, 2013) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-448/
- Biodiversity and Planning Decisions (POSTnote 429, 2013) http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-429

Appendix C

Summary of Written Evidence Submissions Received

In May 2017 the Commission issued an open call for written evidence of the need to enhance biodiversity and the best means of doing so.

Buglife - the only organisation in Europe devoted to the conservation of all invertebrates.

The evidence submitted by Buglife expressed particular concern at the continuing loss of brownfield sites to development in urban areas - many of these areas are often prioritised for development but are often incredibly valuable for invertebrates and other wildlife. The submission referred the Commission to the information provided in the organisation's brownfield guidance: www.buglife.org.uk/sites/default/files/Planning%20for%20Brownfield%20Biodiversity.pdf and the wider information on their brownfield hub: https://www.buglife.org.uk/brownfield-hub

The submission also asked the Commission to consider the needs of native wild pollinators found across urban areas, including London. The response proposed that the Council be asked to develop a Local Pollinator Action Plan so that the needs of pollinators are considered and proactively addressed across the whole range of council functions and duties. Advice on the preparation of a Local Pollinator Action Plan along with more information on the needs of urban pollinators was proffered: www.buglife.org.uk/sites/default/files/Helping%20Pollinators%20Locally.pdf

GiGL (Greenspace Information for Greater London)

The GiGL response addressed some of the specific questions that the Commission had set for the submission of evidence.

1. What can be done to enhance the biodiversity of a densely populated urban environment such as Hammersmith & Fulham?

The first step towards enhancing biodiversity is to understand what is present in the Borough. This is something we can assist you with as we hold species, habitat, open space and designated site data for the whole of Greater London - http://www.gigl.org.uk/our-data-holdings/ but it is also something that Hammersmith and Fulham can contribute to, for instance through commissioning new borough-wide habitat surveys, or targeted species surveys to improve your understanding and knowledge of particular sites or species in your area. A data visualisation (Hammersmith&FulhamVis) from 2015 is also provided separately to give an overview of the species data we hold specifically for your area.

It is also important to comply with national and regional policy and legislation pertaining to the natural environment, and this is also something we can help with via services developed for this purpose. A copy of a recent letter (biodiversity evidence) sent to all heads of planning in London is attached separately to this email, and sets out relevant policy and the current performance generally of the planning system in relation to nature.

2. What examples of good practice can we draw upon?

A number of London Boroughs are refreshing and relaunching their biodiversity action plans, a proven mechanism for engaging London experts and local people in the design of projects and also in the decision-making process.

3. How best can we monitor improvements?

There will be examples in local and regional biodiversity action plans, but suggestions specifc to our remit include:

By establishing a baseline for habitats, species, and designated sites, and resurveying them on a regular basis to detect changes due to site management, development and other external factors.

By monitoring changes in the number of planning applications submitted with evidence of a background data search being undertaken by GiGL (see the Biodiversity Evidence letter for further details).

Port of London Authority

The PLA and stakeholders recently developed a Vision for the Tidal Thames (http://www.pla.co.uk/About-Us/The-Thames-Vision) which includes a goal to make the river the cleanest since the Industrial Revolution. To achieve this there are a number of priority actions, including "Improve biodiversity of sites recognised for their wildlife interest, and the connections between them". To prorgess this action the Authority has recently set up a Biodiversity Group of relevant environmental regulators and charities. This Group is looking at many of the same issues that the H&F Biodiversity Commission has been looking at– principally what data is available, how can we encourage creation of green corridors and improve biodiversity of sites and how can we monitor improvements. The Vision is looking to enhance connections along the river corridor and for 500m inland of Mean High Water. The PLA has also established an Invasive Non-Native Species (INNS) Group of interested stakeholders to look at tackling the issue of INNS in the river and the riverside land to 500m inland.

The PLA addressed the specific questions set out by the Commission in its invitation for submissions of written evidence.

1 What can be done to enhance the biodiversity of a densely populated urban environment such as Hammersmith and Fulham?

The Environment Agency has produced a guidance document "Estuary Edges" (currently being rewritten and updated but the existing version is available here -

http://webarchive.nationalarchives.gov.uk/20140328084622/http:/www.environmentagency.gov.uk/business/sectors/100745.aspx). This outlines the types of enhancements that can be made to hard riverside structures. Working to prevent the establishment of invasive non-native species (INNS) will also enhance biodiversity in the Borough. Preventing litter can also improve visual appearance and prevent harm to animals, birds and fish. The Cleaner Thames campaign, coordinated by the PLA and supported by organisations like Tideway, Thames 21 and the Thames Litter Forum, has been working since September 2015 to raise awareness of the impacts of litter on the river environment and to encourage people to bin their litter. Appropriate design of lighting to prevent light spill can encourage wildlife by taking away the disorientating effects of artificial light.

2 What examples of good practice can we draw upon?

In terms of examples of creating green corridors and involving local people the PLA submission suggested looking at at the following organisations:

- The Thames Landscape Strategy as a good example of volunteers and community involvement in landscape improvement schemes.
- Thames21, a volunteer organisation whose aim is to protect and restore the river and its tributaries. Their activities enhance biodiversity by litter-picking, removal of INNS and encouraging Sustainable Urban Drainage (SUDS).
- The Zoological Society of London (ZSL) undertake fish surveys in the river and utilise volunteer Citizen Scientists. They have developed a guidance document for

developers "Conservation of Tidal Thames Fish through the Planning Process".

- BugLife have developed a Beelines project which aims to create networks of flower rich pathways and their project may offer some suitable examples of land-based green corridors.

3 How best can we monitor improvements?

The PLA is currently considering this question to quantify the progress towards the aims of the Thames Vision. Ideas that have been suggested include:

- Regular surveying for "flagship" species which can represent a wider range of species or a particular biodiversity community.
- Aerial surveys looking at "green" coverage could give a guide to loss or gain of vegetative cover.
- Number of river frontage developments that have been designed in accordance with "Estuary Edges".
- Control of INNS

4 Where should responsibility lie for delivering such improvements?

Responsibility for delivering such improvements ultimately lies with the landowner. Although the PLA owns much of the tidal River Thames and its tidal tributaries, the river edges are the responsibility of the riparian landowner. There is opportunity to influence developers and those doing repairs and refurbishment during the planning process by responding to planning consultations.

Terrapin Bright Green

This organisation submitted three publications on Biophilic design that might be best considered as part of the litreature review.

Dr Daniela Perrotti, Lecturer in Environmental Design, University of Reading

Dr Perrotti alerted the Commission to efforts to promote biodiversity in France by local authorities and communities in the last few years which has resulted in a newly designed Biodiversity Law (and a new French Agency for Biodiversity) adopted last year which has the great value of including the compensation of ecological damage for example in the civil code: http://www.gouvernement.fr/en/reclaiming-biodiversity-nature-and-landscapes.

Woodland Trust

1. What can be done to enhance the biodiversity of a densely populated urban environment such as Hammersmith & Fulham?

Firstly, the existing biodiversity resource must be protected, both through robust local planning policies and by correct management. There are also threats to trees from pests (such as oak processionary moth) and diseases (such as acute oak decline), which have to be addressed.

One of the best ways to enhance biodiversity is by planting more trees (particularly native broad-leaved trees where possible). As well as improving biodiversity, there is now a wealth of evidence on the many other benefits of increasing tree canopy cover. These include improving: physical and mental health; air quality; water quality; water management (reducing flooding); shading; cooling through evapo-transpiration. Most of these issues are summarised, along with the appropriate references for the background research and evidence, in the Trust's publication Residential Development and Trees.

2. What examples of good practice can we draw upon?

The Woodland Trust submission referred the Commission to guidance on incorporation of trees on its website (www.woodlandtrust.org.

uk/publications/). The submission made specific reference to Trees or Turf? which shows it is often cheaper to maintain newly planted woodland than amenity grassland.

The Trees and Design Action Group (TDAG), noted in London Plan Policy 7.21, has recently published a practical guide for the retention and planting of trees in urban situations, including new development: Trees in the Hard Landscape (TDAG, September 2014).

The Royal Borough of Greenwich produced a draft "Greener Greenwich Strategy; The Council's response to a changing climate" in 2016 which included a chapter on the natural environment. This had plans for improvement, and noted the role of local communities.

3. How best can we monitor improvements?

The Woodland Trust recommend regular biodiversity surveys and state that the basic habitat survey should be the responsibility of the Borough, but local volunteers should be able to supplement this – the response suggesed contacting the London Wildlife Trust and London Natural History Society. With regards to canopy cover, there is emerging technology that can record this remotely, such as Bluesky, or Lidar. The London Tree Officers Association can advise on the most appropriate tools.

4. Where should responsibility lie for delivering such improvements?

The Trust response states that the Borough is in the best position to at least lead on delivery, and set a positive examplebut notes that part of this would be through having robust planning policies that protect what is in the Borough and promote development by others that enhances biodiversity.

The submission suggests that a Supplementary Planning Document (SPD) on biodiversity could be drafted that could include reference to the Access to Nature principle in London Plan Policy 7.19. Section C of this policy states: "Development Proposals should: …b prioritise assisting in achieving targets in biodiversity action plans (BAPs), set out in Table 7.3, and/or improving access to nature in areas deficient in accessible wildlife sites". Section F directs Borough LDFs to "identify areas deficient in accessible wildlife sites and seek opportunities to address them".

The All London Green Grid SPG (GLA, 2012) has further detail on mapping and addressing areas of deficiency, but the London Plan Implementation Report Improving Londoners' Access to Nature (GLA, February 2008) is the definitive document on how areas of deficiency could be addressed.

The Trust has produced the Woodland Access Standard, now adopted by the Forestry Commission, and has information at a London Borough level of where deficiencies in access to woodland lie, which should help inform the creation of new wooded open spaces as part of any approach to reducing areas of deficiency.

On the topic of individual tree planting, Section 197 of the 1990 Planning Act requires planning authorities to include appropriate provision for planting of trees when granting planning permission: "It shall be the duty of the local planning authority— (a) to ensure, whenever it is appropriate, that in granting planning permission for any development adequate provision is made, by the imposition of conditions, for the preservation or planting of trees."

The SPD should address the Access to Nature and Woodland Access Standards mentioned above, perhaps suggesting that "Any development within areas deficient in accessible wildlife sites and accessible woodland must contribute to addressing those deficiencies."

Zoological Society of London

The Zoological Society of London submitted its Guidance Document: "Conservation of Tidal Thames Fish through the Planning Process", which might also be considered as part of the literature review.

Appendix D

Extract from the Hammersmith Society's Response to the Old Oak and Park Royal Development Corporation Consultation.

Wormwood Scrubs

Existing Character: The status (and legal protection) as Metropolitan Open Space should be specifically mentioned and emphasized in this section and in the Vision. As noted earlier, we have read and fully support the submission 'Response by the Friends of Wormwood Scrubs'.

Most local groups and residents wish to see Wormwood Scrubs preserved much as it is. Its natural wild character is much enjoyed and urbanisation should be resisted. "Potential sensitive improvements" (4.163) should be viewed with caution. The sustainability of visitor numbers should be taken into account with any open space. Wormwood Scrubs will receive much greater visitor numbers in the future from new residents and workers in the OPDC area and priority should be given to preserving its informal character rather than increasing hard-surface walking and cycling routes or attracting visitors from further afield.

Wormwood Scrubs must not be allowed to be assumed as provision of open space by either OPDC or developers, as a substitute for adequate on site provision. It also should not be used as a construction site.

Pedestrian Access: We, together with most other groups, have objected most strongly to the Green Cross concept shown on earlier strategic maps in the original Plan. (Eg. Figures 8 and 10: P.19 and 25) with a large south facing arrow across Wormwood Scrubs from the HS2/Elizabeth Line Crossrail station. This potential pedestrian route has been removed from most of the latest maps but is still shown on Figure 3.8 –Proposed Connections and Figure 4.52 – Wormwood Scrubs Place. There is no logic to implying a major pedestrian flow in this location. We note that on other maps, including the transport assessment maps, this desire line is shown to the east with a route on or parallel to Scrubs Lane connecting with White City. This route should be relocated to the east and related to the canal bridge indicated south of Hythe Road station – This would also provide a logical connection down the east side of Wormwood Scrubs to Wood Lane and White City.

However there would be an opportunity for the canal towpath to be linked with the Scrubs by adding a green corridor between the two near the eastern edge of the OPDC area and this could even be a continuation southwards of the most eastern of the northsouth routes that are planned for crossing the canal.

11.

Supporting text WS8 identifies *"new and enhanced access" "from Old Oak Common Station and surrounds"*. The location of the Local Nature Reserve in Wormwood Scrubs makes direct access from the station inappropriate and potentially damaging, therefore, neither justified nor effective.

Additionally, rail passengers are unlikely to need direct access to the Scrubs – their immediate concern will be to access Crossrail or their home/work. We support the comments of the Friends of Wormwood Scrubs on this point. **There is no evidence base for such an access point so its provision is neither justified nor effective.**

The previous draft referred to "***retaining Wormwood Scrubs as a public open space that is more wild than tamed".*** This description of the Scrubs should be integral to informing any intervention or "enhancement" to the Scrubs and should be retained in the Plan supporting text. We have seen no evidence to justify its removal.

P12 and supporting text has moved to an emphasis on "improvements" and "enhancements" to the Scrubs. This suggests a developing policy of a highly "managed" parkland, at odds with the character of Wormwood Scrubs as recognised in the previous draft, and for which there is no justification. The comments of the Friends of Wormwood

Scrubs demonstrate how there is no regulatory justification for such an approach.

The effects of light from multiple tall towers will be detrimental to amenity in surrounding areas, and particularly to wildlife and amenity on Wormwood Scrubs. This section should address policies to limit light pollution in regard to Wormwood Scrubs. As one resident explained, it is one of the few places in London where you can see the stars and the night sky.

Views to and from Wormwood Scrubs: Views to and from Wormwood Scrubs should ensure that the character of the Metropolitan Open Space is not overwhelmed by tall buildings, Views such as Fig28:p61 (in the Original Draft) would permanently damage the character of Wormwood Scrubs. Tall buildings must be set well back from the perimeter. We have repeated this concern to no avail in our responses to recent planning applications for Mitre Yard and North Kensington Gate.

Only drainage to pitch areas should be considered. It is important to ensure that sustainable drainage measures in the development area do not adversely affect Wormwood Scrubs.

Appendix E

Analysis of Survey Returns

Total respondents: 251

About you

Age groups

	Number	%	2016 H&F population* %
18 - 29	8	3.2%	20.1%
30 - 49	83	33.1%	35.3%
50 - 64	77	30.7%	14.5%
65 - 84	65	25.9%	9.2%
85+	1	0.4%	1.3%
Not Answered	4	1.6%	-
Prefer not to say	6	2.4%	-
Under 18	7	2.8%	19.6%
Grand Total	251	100.0%	

Mid-2016 ONS population estimate

The 251 respondents mainly comprised of the 30-49, 50-64 and 65-84 age groups. However, compared to the latest population estimates the proportion of 50-64 and 65-84 age groups in the survey are overrepresented:

The 50-64 age group made up 30.7% of survey respondents but there were only 14.5% of them in the total population.

The 65-84 age group made up 25.9% of survey respondents but there were only 9.2% of them in the total population.

The respondents from the younger age groups (under 18s and 18-29) were under represented in the survey compared to their proportions in the population.

This should be considered when interpreting these survey results.

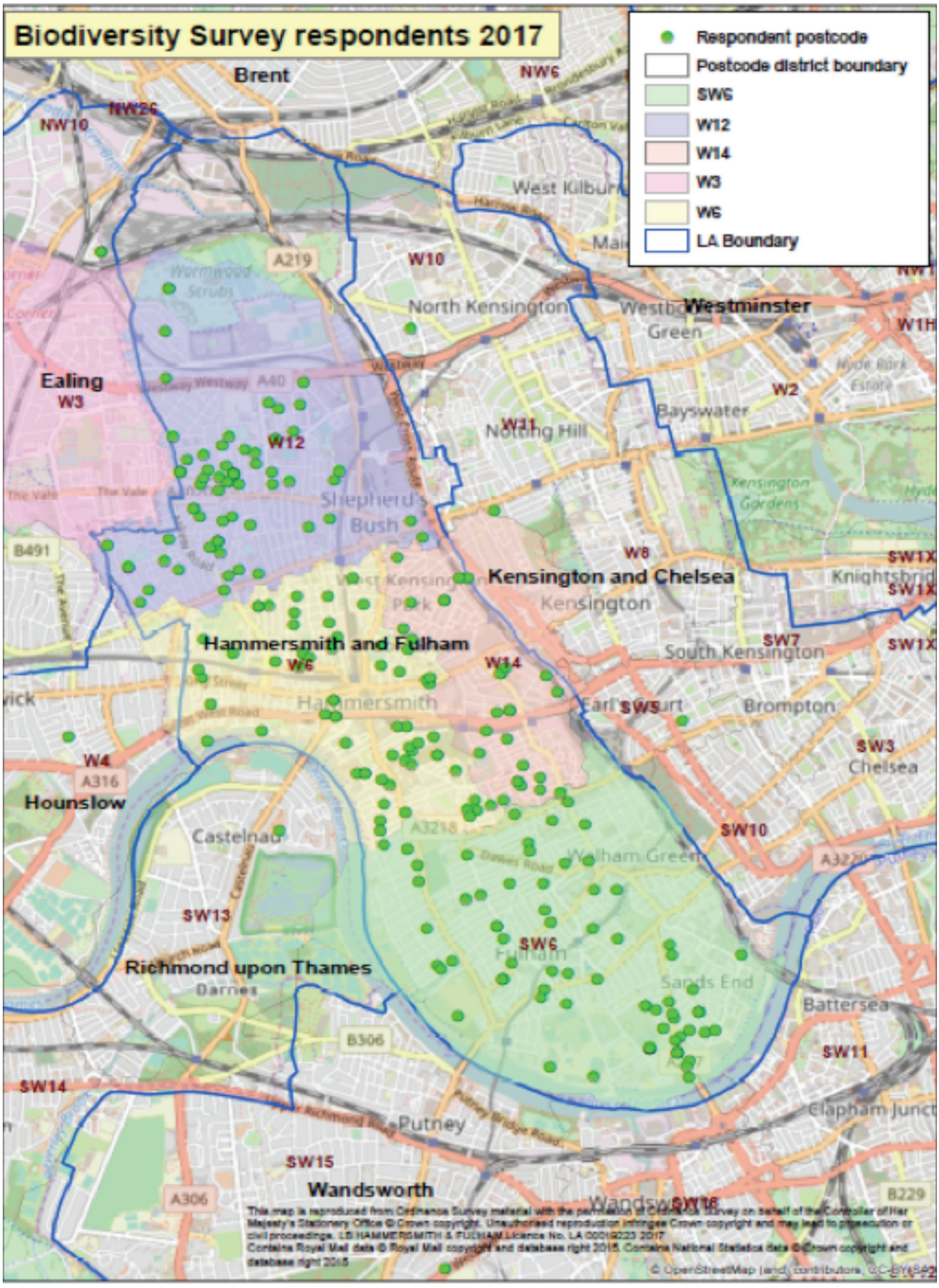
Do you have access to a garden?

	Number	%
No	44	18%
Yes	201	80%
Not Answered	6	2%
Grand Total	251	100%

Postcode analysis

The 251 respondents covered 244 known postcodes, 233 of which were within the Borough. The table shows the respondents by postcode district. The map below provides the location of the respondents' postcodes within/ outside the Borough colour coded by the postcode districts.

Postcode district	Respondents in each area
Hammersmith & Fulham	233
SW6	70
W12	71
W14	28
W3	2
W6	62
Unknown	2
Outside H&F	11
Total	246


Biodiversity Survey respondents 2017
Respondent postcode
Postcode district boundary
SW6
W12
W14
W3
W6
LA Boundary
Brent
NW6
NW26
NW10
A219
W10
North Kensington
Westminster
W1H
Ealing
W3
A40
W12
W2
Bayswater
W11
Notting Hill
Shepherd's Bush
Kensington Gardens
B491
W8
Kensington and Chelsea
SW1X
Kensington
Hammersmith and Fulham
W6
W14
SW7
South Kensington
Hammersmith
SW5
Brompton
SW3
Chelsea
W4
A316
Hounslow
Castelnau
SW10
Barnes
SW13
SW6
Richmond upon Thames
Sands End
Battersea
B306
SW11
SW14
Putney
Clapham Junct
SW15
Wandsworth
A306
SW16
B229
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Questionnaire

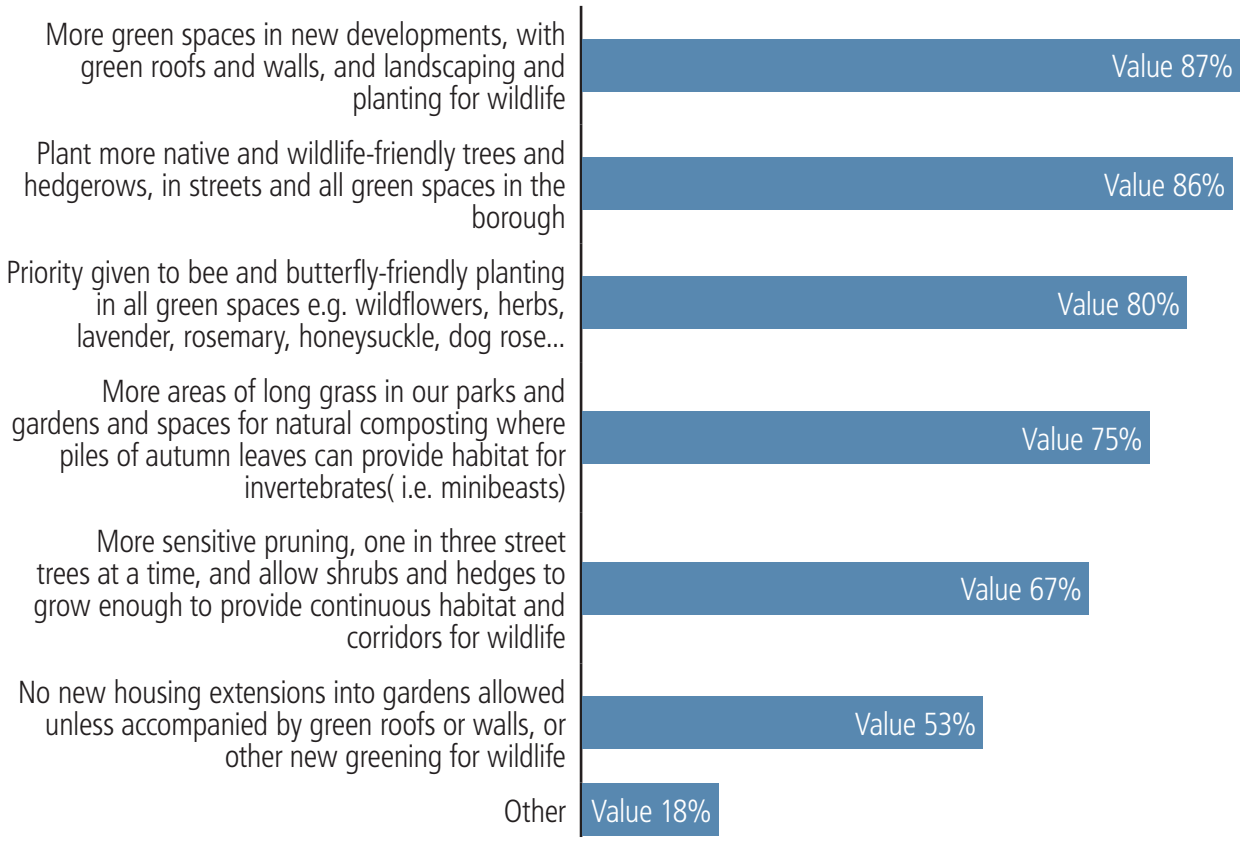
Q1. Improving biodiversity is...

	Number	%
Very important	233	93%
Quite important	13	5%
Not important	2	1%
Not Answered	3	1%
Grand Total	251	100%

Why improving biodiversity is important? The most frequent themes from comments are:

Nature, environment, health, wildlife, life, air, quality, trees

Q2. What do you think ideally needs to happen to make the environment in Hammersmith and Fulham more wildlife-friendly? (Analysis by number of respondents)

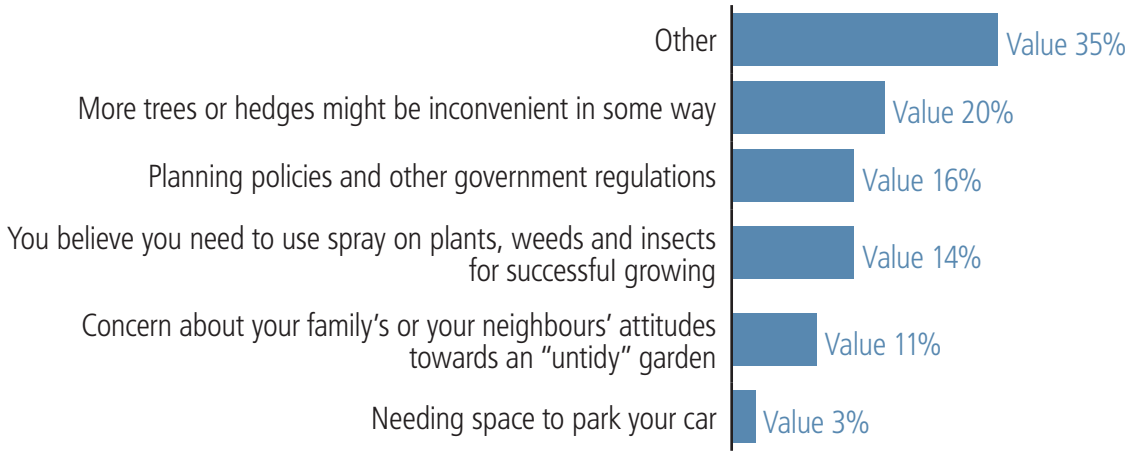


Q3. Have you been able to support biodiversity or make your environment more wildlife friendly – in your garden or on your allotment or balcony or in a local green space?

Numbers	Planting native trees and shrubs	Planting pollinator friendly plants	Untidy patch/ creating bug hotel	Stop using spray on plants, weeds and insects
No	51	33	64	45
Yes	174	199	154	173
Don't know	11	6	7	16
Grand Total	236	238	225	234

Percentages	Planting native trees and shrubs	Planting pollinator friendly plants	Untidy patch/ creating bug hotel	Stop using spray on plants, weeds and insects
No	22%	14%	28%	19%
Yes	74%	84%	68%	74%
Don't know	5%	3%	3%	7%
Grand Total	100%	100%	100%	100%

Q4. What are the key factors stopping you from taking action to make your environment wildlife-friendly?



The most frequent responses from the 'other' category:

Small (garden)/ lack of space, Council's policies/ lack of assistance, lack of time, lack of money, neighbour's interference

Q5. Have you noticed a decline in wildlife in your local area?

Numbers	Fewer birds	Fewer bats	Fewer butterflies	Fewer bees	Other
No	91	22	28	58	11
Yes	102	61	148	119	34
Don't know	45	146	62	58	32
Grand Total	238	229	238	235	77

Percentages	Fewer birds	Fewer bats	Fewer butterflies	Fewer bees	Other
No	38%	10%	12%	25%	14%
Yes	43%	27%	62%	51%	44%
Don't know	19%	64%	26%	25%	42%
Grand Total	100%	100%	100%	100%	100%

The most frequent responses from the 'other' category:

No hedgehogs, more/less foxes, less frogs, more squirrels, more parakeets

Some consequences of the decline:

Different bird species, changing bee population

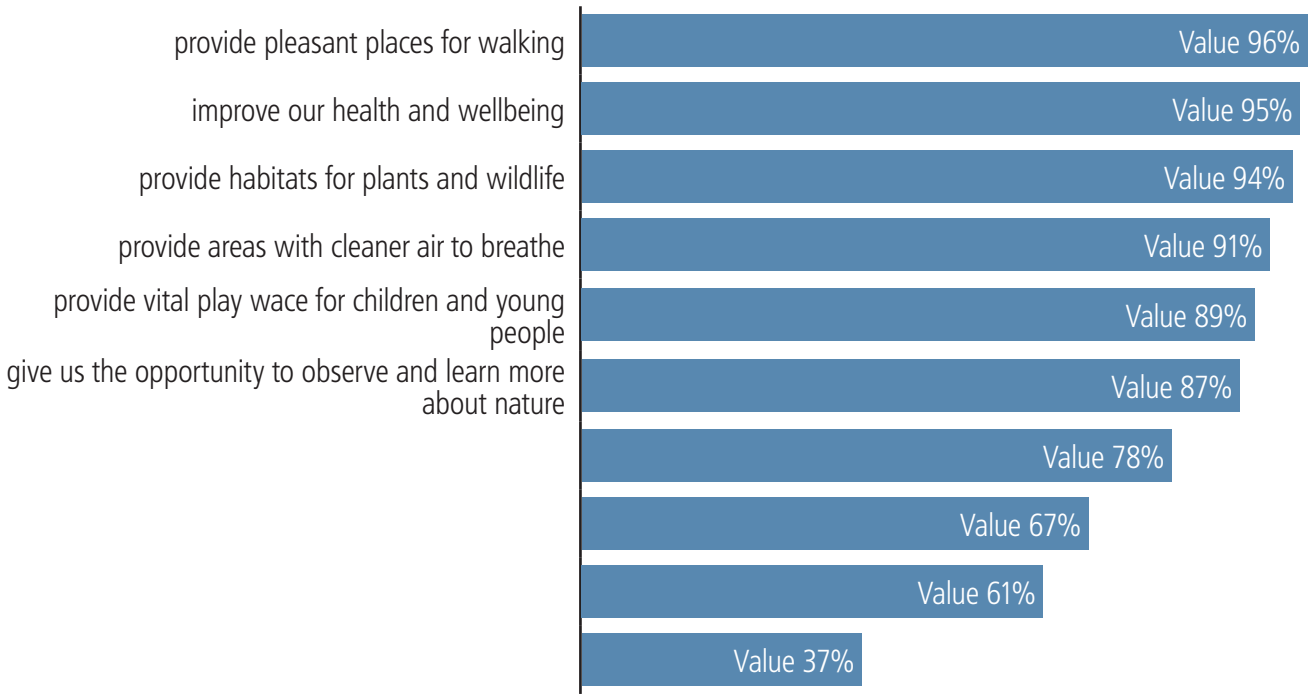
Q6. Do you envisage any possible conflicts of interest if more measures were taken in H&F to provide habitats and corridors for wildlife?

	Numbers	%
No	130	52%
Yes	66	26%
Don't know	42	17%
Not Answered	13	5%
Grand Total	251	100%

Explanation of possible conflicts

- Conflict with developers not wanting spaces to be used for wildlife as this will impact revenue.
- Less housing will be built when there is a need for more
- Complaints about untidy areas
- Trees- beneficial for air pollution/biodiversity etc but can cause residents problems ie, fruit falling on cars, blocking sunlight from windows etc
- The Borough should be educated of the benefits of habitats to help reduce these conflicts

Q7. GREEN SPACES are of great benefit to people of all ages, and there is evidence of all potential benefits listed below. (Analysis by number of respondents)



Q8. If you have seen any of the following in Hammersmith and Fulham or close by, please say WHEN and WHERE.

HEDGEHOGS

Hedgehogs - When?	No. of sightings	%
Everyday	0	0.0%
Within the last few weeks	0	0.0%
Around a month ago	0	0.0%
Within the last 6 months	0	0.0%
Within the last 6 - 12 months	1	1.8%
Within the last 2 years	1	1.8%
Within the last 5 years	2	3.6%
Around 10 years ago or longer	20	36.4%
Cannot remember/ don't know	0	0.0%
Other period	2	3.6%
Never seen	29	52.7%
Total responses	55	100.0%

Hedgehogs - Where?	No. of sightings	%
Garden	10	50.0%
Ravenscourt Park/Glasshouses at Ravenscourt Park	4	20.0%
Other	2	10.0%
Local Road	2	10.0%
Home car park	1	5.0%
Station	1	5.0%
Total answered	20	100.0%

JAYS

Jays - When?	No. of sightings	%
Everyday	5	5.7%
Within the last few weeks	8	9.1%
Around a month ago	7	8.0%
Within the last 6 months	4	4.5%
Within the last 6 - 12 months	14	15.9%
Within the last 2 years	16	18.2%
Within the last 5 years	3	3.4%
Around 10 years ago or longer	3	3.4%
Cannot remember/ don't know	2	2.3%
Other period	17	19.3%
Never seen	9	10.2%
Total answered	88	100.0%

Jays - Where?	No. of sightings	%
Garden	50	56.8%
Other	10	11.4%
Ravenscourt Park	6	6.8%
Local Road	5	5.7%
Cemetery	4	4.5%
Wormholt Park	3	3.4%
Wormwood Scrubs	3	3.4%
Allotments	2	2.3%
Wormholt Park	1	1.1%

Jays - Where?	No. of sightings	%
London Wetland Centre	1	1.1%
Norman Park, SW6	1	1.1%
Richmond park	1	1.1%
Sooth Park	1	1.1%
Total answered	88	100.0%

HOUSE SPARROWS

House Sparrows - When?	No. of sightings	%
Everyday	3	3.6%
Within the last few weeks	17	20.5%
Around a month ago	4	4.8%
Within the last 6 months	3	3.6%
Within the last 6 - 12 months	11	13.3%
Within the last 2 years	3	3.6%
Within the last 5 years	1	1.2%
Around 10 years ago or longer	2	2.4%
Cannot remember/ don't know	3	3.6%
Other period	24	28.9%
Never seen	12	14.5%
Total answered	83	100.0%

House Sparrows - Where?	No. of sightings	%
Garden	41	47.1%
Other	21	24.1%
Local Road	9	10.3%
Ravenscourt Park	3	3.4%
Wormholt Park	3	3.4%
Cemetery	2	2.3%
Wormwood Scrubs	2	2.3%
Eel Brook Common	1	1.1%
Frank Banfield Park	1	1.1%
Marcus Garvey park	1	1.1%
Near Brook Green and Phoenix Farm	1	1.1%

House Sparrows - Where?	No. of sightings	%
South Park, street	1	1.1%
St Marks Park, RBKC	1	1.1%
Total answered	87	100.0%

THRUSHES

Thrushes- When?	No. of sightings	%
Everyday	0	0.0%
Within the last few weeks	5	6.9%
Around a month ago	3	4.2%
Within the last 6 months	3	4.2%
Within the last 6 - 12 months	9	12.5%
Within the last 2 years	10	13.9%
Within the last 5 years	3	4.2%
Around 10 years ago or longer	1	1.4%
Cannot remember/ don't know	3	4.2%
Other period	18	25.0%
Never seen	17	23.6%
Total answered	72	100.0%

Thrushes - Where?	No. of sightings	%
Garden	17	30.9%
Other	9	16.4%
Cemetery	4	7.3%
Local Road	4	7.3%
Wormwood Scrubs	4	7.3%
Ravenscourt park	3	5.5%
Wormholt Park	3	5.5%
Bishops Park	2	3.6%
South Park	2	3.6%
Allotments	1	1.8%
Cathnor Park	1	1.8%
Eel Brook Common	1	1.8%
In Brook Green	1	1.8%

Thrushes - Where?	No. of sightings	%
in South Park	1	1.8%
On the river by Black Lion / in Ravenscourt Park	1	1.8%
South Park and Eel Brook Common	1	1.8%
Total answered	55	100.0%

BATS

Bats- When?	No. of sightings	%
Everyday	0	0.0%
Within the last few weeks	2	3.3%
Around a month ago	2	3.3%
Within the last 6 months	2	3.3%
Within the last 6 - 12 months	12	20.0%
Within the last 2 years	5	8.3%
Within the last 5 years	7	11.7%
Around 10 years ago or longer	1	1.7%
Cannot remember/ don't know	2	3.3%
Other period	7	11.7%
Never seen	20	33.3%
Total answered	**60**	100.0%

Bats- Where?	No. of sightings	%
Garden	21	47.7%
Other	12	27.3%
Wormwood Scrubs	3	6.8%
Barnes Wetland Centre	2	4.5%
Cemetery	1	2.3%
Ravenscourt Park	1	2.3%
Local Road	1	2.3%
South Park	1	2.3%
W12 park	1	2.3%
Wendell Park	1	2.3%
Total answered	44	100.0%

FROGS OR TOADS

Frogs or toads- When?	No. of sightings	%
Everyday	0	0.0%
Within the last few weeks	7	8.4%
Around a month ago	5	6.0%
Within the last 6 months	2	2.4%
Within the last 6 - 12 months	14	16.9%
Within the last 2 years	9	10.8%
Within the last 5 years	2	2.4%
Around 10 years ago or longer	0	0.0%
Cannot remember/ don't know	1	1.2%
Other period	29	34.9%
Never seen	14	16.9%
Total answered	83	100.0%

Frogs or toads- Where?	No. of sightings	%
Garden/ garden pond	44	61.1%
Allotments	10	13.9%
Other	6	8.3%
Ravenscourt park/ pond/ nature garden	5	6.9%
Barnes Wetland Centre	3	4.2%
Glasshouses, Ravenscourt Park	1	1.4%
Godolphin park	1	1.4%
Holland Park	1	1.4%
Local Road	1	1.4%
Total answered	72	100.0%

The main location in which these animals were seen were mostly in people's gardens. Jays were also spotted in a number of the Borough's parks, and house sparrows were also seen in hedges beside local roads. The majority of these animals were last seen between 6-12 months and within 2 years, except for hedgehogs seen around 10 years ago or longer and house sparrows which were mainly spotted within the last few weeks.