1. Introduction

The UCL urban estate comprises main teaching and research campuses, halls of residence, and other sites spread across London.

Ecological assessments of the Bloomsbury and Fitzrovia estate situated in the London Borough of Camden were undertaken in 2012/13 where, unsurprisingly, the most dominant habitat found was bare artificial habitat made up of the roads, paths, buildings and street furniture, but little green space.

The estate overall can be considered a priority habitat within the Camden and Westminster Biodiversity Action Plans which outline target aspirations around the enhancement of the built environment for biodiversity and improvements to ecological connectivity.

The UCL urban estate is conveniently located adjacent to and within easy reach of green spaces and so can support these targets and create stepping stones which ultimately form wildlife corridors.

UCL published its sustainability strategy reflecting the values and guiding principles set out in the 2011-21 UCL White Paper. The core aims are:

1. To create a campus which supports UCL’s academic, research and enterprise activities in a sustainable way
2. To enable, empower and support all UCL communities to address our environmental sustainability impacts
3. To provide the education, advancement, dissemination and application of sustainable development
4. To maximise the wider impact of UCL’s environmental sustainability activities at local, regional, national and international level through collaboration, partnership and communications
5. To become a leader across the HE sector in terms of environmental sustainability

Developing a Biodiversity Strategy and Action Plan will help to shape a set of deliverables against some of these aims. This Biodiversity Strategy and Action Plan will be a tool to ensure the protection, enhancement and promotion of the natural environment within the estate and to provide guidance to estates managers on the biodiversity interventions appropriate to support the planning process as the estate develops.
2. **Why biodiversity is important in an urban environment**

Every living thing has a place in what we call the 'balance of nature', and upsetting that balance can have untold effects where changes in biodiversity can influence the supply of ecosystem services.

At its most basic level, **biodiversity is the existence of a wide variety of plant and animal species in their natural environments** and therefore sustains all life. For humanity biodiversity provides food, fuel, raw materials for shelter, clothing, and medicines. Added to that is its essential function of recycling carbon dioxide into oxygen. Biodiversity also benefits the wider environment which people inhabit.

On 22\textsuperscript{nd} May 2013 the State of Nature report was published which highlights the decline of biodiversity across the UK and therefore the importance of redressing the balance.

‘Of the 658 urban species for which we have data, 59% have declined and 35% have declined strongly. Invertebrates are doing particularly poorly in urban environments with 42% (183) showing strong declines.’

State of Nature report published 22 May 2013

Contact with nature has many proven physical and mental benefits. Since more than 80% of the UK’s population live in urban areas, it is essential that people living there are provided with sufficient opportunities to experience nature.

Within Greater London, there are a number of nationally important habitats which can provide vital places to live for a wide variety of species. Some species are very common, like blackbirds, while others are nationally rare, such as the tower mustard plant and the stag beetle (over 30% of whose national population is found in London). Some once common species, such as the house sparrow, are now becoming rarer in the capital, while other species

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\(^1\) Collins English Dictionary
\(^2\) State of Nature 2013
have special legal protection, especially bats and reptiles.

London’s rich and diverse wildlife is under constant pressure from human activity. Climate change will further increase this pressure. By devising this Biodiversity Strategy and the action plan to maintain and enhance the wildlife value of its urban estate, UCL can contribute towards the capital’s 2015 habitat targets.

3. Biodiversity Action Planning

This Biodiversity Strategy and Action Plan sets objectives and actions for the conservation of biodiversity, with measurable targets following the UK Biodiversity Action Plan and in this case meeting London’s regional needs.

In 1992, the UK government signed the Rio Convention and committed to halting biodiversity loss through the UK Biodiversity Action Plan.

London’s Biodiversity Action Plan was developed from 1996 by the London Biodiversity Partnership (LBP), comprising of public bodies, statutory organisations, NGOs and private companies which subsequently published an audit of the regions habitats and species which incorporated an assessment of their status, threats and requirements. Our Green Capital (2000) and The Action (2001-04) followed, setting into place 31 Action Plans which included 11 habitats, 12 species and 8 generic issues such as site management and communications.

The delivery of London’s Action Plans and subsequent monitoring was overseen by Working Groups within the LBP and a national Biodiversity Action Reporting System established in 2004. All were reviewed between 2007-08 following recommendations from Strategic Targets for Priority Habitats in London (2006). This led to HAPs incorporating targets to increase habitat by 2015 and a measurable SAP target population recovery by
Local Biodiversity Action Plans (LBAPs) for individual boroughs emerged in the late 1990s and aimed to reflect regional and national objectives. Since then a number of documents have been produced which embed and strengthen London’s BAP activity. The Mayor’s Biodiversity Strategy (2002) aimed to achieve this within the GLAs strategic planning arrangements. Since then other guidance and policy have had an additional bearing in and outside London including the Millennium Ecosystem Assessment (2005), UK National Ecosystem Assessment (2011) and Biodiversity 2020: A strategy for England’s wildlife and ecosystem services (2011).

The Government launched The Natural Choice, the Natural Environment White Paper (NEWP), in June 2011. This sets out an ambitious set of recommendations based on taking landscape scale conservation as the framework, and a range of policy ideas, such as ecosystem services, to help embed it. The BAP process, in some respect, has changed – the view that the key elements are now in place, and that it is for local providers and delivery agents to meet the various species and habitat targets at a local level. London Wildlife Trust is currently auditing the status of biodiversity conservation delivery in London, which will include setting these within the existing structures and the ambitions of the NEWP.

UCL could therefore be considered to be a local delivery agent able to enhance biodiversity contributing to continued improvements on a London-wide scale.

The estate overall can be considered to fit the designation ‘The Built Environment’ priority habitat for the Camden and Westminster Biodiversity Action Plans and some of the more open areas can be considered to fit the designation ‘Parks and Open Spaces’ priority habitat in the London Biodiversity Action Plan.

There are a number of targets associated with these designations to which UCL could contribute.

**Parks and urban spaces**

- Raise awareness of how site management can be improved to enhance access to nature
- Increase the number of volunteers recording wildlife
- Co-ordinate and deliver biodiversity enhancements to grounds

**The Built Environment**

- Improve the condition of the built environment for biodiversity through the incorporation of green roofs, living walls and Sustainable Urban Drainage Systems (SUDS) into existing and new developments

**Species**

- Contribute to an increase in the number of:
  - bats
  - house sparrow

The London Borough of Camden’s BAP specifically has targets for the built environment:

- To enhance the built environment for biodiversity and improve ecological connectivity within the urban landscape;
- To encourage planners, developers and building owners to design for biodiversity and install features beneficial to wildlife.

The City of Westminster BAP is also concerned with the built environment

- To protect and enhance biodiversity in the built environment. To create opportunities for biodiversity in new developments.

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4. **UCL Biodiversity Strategy and Action Plan**

**Vision**

We will enhance biodiversity across our urban estate to create corridors of wildlife connectivity
Strategic aim

To work with stakeholders to deliver phased enhancements in partnership as part of a holistic approach which delivers opportunities for teaching, research, engagement, working with local communities and improves the estate for both people and wildlife.

Action planning

1. **target species** that can be attracted onto UCL estates
2. create new **habitats** and **food** sources to attract the target species
3. provide **guidance** for biodiversity improvements in masterplans
4. **involve** students and staff in delivering the improvements
5. **monitor** the interventions
6. **communicate** the benefits and achievements of biodiversity improvements
7. **identify** academic projects that integrate biodiversity into the learning framework

Benefits

UCL can benefit from enhancing biodiversity in a number of ways:

a) More biodiverse outdoor spaces can provide **enjoyment and wellbeing** to students and staff;
b) Involving students and staff in improving biodiversity may **inspire** them to be more engaged with the wider sustainability agenda;
c) Biodiversity projects provide a chance to **partner** with many different **stakeholders** and could also see normally separate internal groups collaborating;
d) Implementing this Biodiversity Strategy and Action Plan will provide **opportunities** for academic engagement

e) Enhancing and conserving biodiversity will deliver some of the **targets** in local Biodiversity Action Plans (London, Camden and Westminster BAPs);
f) Improving biodiversity will help the University meet **planning conditions** for new developments; this includes maximising credits under BREEAM assessment by demonstrating a campus-wide commitment to biodiversity

g) This move forward of addressing biodiversity will further enhance the University’s **lead** on sustainability and demonstrate its **responsibility** to the natural environment
h) Providing **impetus** for interaction across disciplines to feed into existing research and academic programmes such as the UCL Grand Challenge of Sustainable Cities

It is important to recognise that most UCL sites are within an intensively built up environment but we can create biodiverse pockets which, when linked, can become corridors between key spaces from Queens Square to Fitzroy Square.

In order to meet these objectives, we will focus on 7 key workstreams that in combination and partnership will show incremental improvements year on year.
5. **Workstreams**

**Target species**

Despite the abundance of artificial (concrete, brick, glass and metal) surfaces, the built environment can be a valuable habitat for some species that have adapted to co-exist with people. The presence of trees and vegetated spaces help to provide foraging areas and shelter for species.

For UCL it is appropriate to enhance the estate to attract some of the more common London species. These species may already be in some of the surrounding open spaces:

**Bats (forage only)**
- Pipistrellus pipistrellus and *P. pygmaeus* noctule, *Nyctalus noctula*

**Birds**
- swift, *Apus apus*
- common starling, *Sturnus vulgaris*
- wren, *Troglodytes troglodytes*
- robin, *Erithacus rubecula*
- blackbird, *Turdus merula*
- song thrush, *Turdus philomelos*
- blue tit, *Cyanistes caeruleus*
- great tit, *Parus major*
- long tailed tit, *Aegithalos caudatus*
- house sparrow, *Passer domesticus*

**Butterflies**
- gatekeeper, *Pyronia tithonus britanniae*
- meadow brown, *Maniola jurtina*
- painted lady, *Vanessa (Cynthia) cardui*
- comma, *Polygonia c-album*
- peacock, *Aglais [Inachis] io*
- red admiral, *Vanessa atalanta*
- small tortoiseshell, *Aglais urticae*

**Dragonflies (generic)**

**Bumblebees**
- buffet-tailed bumblebee, *Bombus terrestris*
- white-tailed bumblebee, *Bombus lucorum*
- garden bumblebee, *Bombus hortorum*
- early bumblebee, *Bombus pratorum*
- common carder bee, *Bombus pascuorum*
- red-tailed bumblebee, *Bombus lapidarius*
- tree bumblebee, *Bombus hypnorum*
- heath bumblebee, *Bombus jonellus*
New habitats and food sources

Key to attracting species is to create a range of habitats and food sources suitable for London’s wildlife. By creating these strategically across sites, green corridors will be created linking UCL to neighbouring green spaces.

- Enhanced landscapes – changes to management of existing vegetation, providing greater structural diversity
- Ponds – standing water can attract flying insects and mammals
- Green walls – provide shelter and potential nesting for birds and invertebrates
- Biodiverse roofs – secluded areas for birds and invertebrates to colonise
- Insect ‘hotels’ – specifically designed overwintering homes for invertebrates
- Additional planters in selective areas – will encourage more active involvement
- Wildlife-friendly planting – native and selective non-native species to provide nectar and seeds for wildlife
- Bird feeding stations – extra food source for birds during the winter
- Planting trees - broad-leaved trees will cool surrounding buildings and provide nesting sites, food and shelter for wildlife

Guidance

A step-by-step kit of parts on biodiversity interventions
Links to industry best practice

Involvement

UCL estates alone can only do so much. Without the involvement and commitment of stakeholders and partners, our vision cannot be met;

- UCL Estates including outsourced partners
  - Strategy & Programme Delivery
  - Property & Accommodation
  - Facilities & Infrastructure
  - Portfolio & Business Services
Monitoring

Set up a Bioblitz programme to educate ‘Biodiversity Champions’ on how to recognise and then record the results of interventions.

This will enhance our own understanding of biodiversity and provide vital feedback to the Greater London population.

Communication

Bringing biodiversity out of the academic arena and making it part of the future using all the social media tools at our disposal as well as traditional communications will ensure that we are talking to the people who will make the difference.
<table>
<thead>
<tr>
<th>Ref</th>
<th>Aim</th>
<th>Action</th>
<th>Target Date</th>
<th>Lead</th>
<th>Other partners</th>
<th>Estimated Cost</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Habitat</td>
<td>Map potential locations for interventions into landscape (grounds) management to enhance biodiversity</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>Estates Stakeholder Group</td>
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<tr>
<td>2</td>
<td>Habitat</td>
<td>Map wall space suitable for potential usage for retro-fitting with vegetated walls</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>Estates Stakeholder Group</td>
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<tr>
<td>3</td>
<td>Habitat</td>
<td>Map potential locations for green/brown roof retrofitting</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>Estates Stakeholder Group</td>
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<tr>
<td>4</td>
<td>Habitat</td>
<td>Introduce relevant interventions for target species in test areas across grounds</td>
<td>Mar-15</td>
<td>Facilities &amp; Infrastructure</td>
<td>Property &amp; Accommodation UCLUnion</td>
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<tr>
<td>5</td>
<td>Habitat</td>
<td>Always consider fitting vegetated walls in new-build/refurbishment projects</td>
<td>Ongoing</td>
<td>Strategy &amp; Programme Delivery</td>
<td>Facilities &amp; Infrastructure</td>
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<tr>
<td>6</td>
<td>Habitat</td>
<td>Create one new vegetated wall in an area that complements existing or proposed green space</td>
<td>2014-15</td>
<td>Strategy &amp; Programme Delivery</td>
<td>Facilities &amp; Infrastructure</td>
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<tr>
<td>7</td>
<td>Habitat</td>
<td>Relax mowing regimes around the bases of trees in lawned areas</td>
<td>Spring 15</td>
<td>Facilities &amp; Infrastructure</td>
<td>Property &amp; Accommodation UCLUnion</td>
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<tr>
<td>8</td>
<td>Habitat</td>
<td>Include actions to improve biodiversity in Public Realm Strategy</td>
<td>Dec-14</td>
<td>Strategy &amp; Programme Delivery</td>
<td>Safety &amp; Sustainability LWT</td>
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<tr>
<td>9</td>
<td>Species</td>
<td>Map appropriate locations for new bird/bat boxes/bricks on existing buildings and new developments</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>LWT Estates Stakeholder Group</td>
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<tr>
<td>10</td>
<td>Species</td>
<td>Map potential locations for invertebrate ‘hotel’ installation</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>Estates Stakeholder Group</td>
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<tr>
<td>11</td>
<td>Species</td>
<td>Create &quot;signposts&quot; of target species</td>
<td>Dec-14</td>
<td>Strategy &amp; Programme Delivery</td>
<td>UCL Stakeholders</td>
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<tr>
<td>12</td>
<td>Species</td>
<td>Provide advice on most advantageous locations for bird/bat boxes for new build as part of planning process</td>
<td>Ongoing</td>
<td>LWT</td>
<td>Safety &amp; Sustainability Strategy &amp; Programme Delivery</td>
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<tr>
<td>13</td>
<td>Species</td>
<td>Install videocam bird boxes in high profile locations on campus</td>
<td>2015-16</td>
<td>Facilities &amp; Infrastructure</td>
<td>Portfolio &amp; Business Services Information Services</td>
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<tr>
<td>14</td>
<td>Involvement</td>
<td>Create academic project around urban biodiversity</td>
<td>Spring 2015</td>
<td>Academic Stakeholders</td>
<td>Safety &amp; Sustainability LWT</td>
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<tr>
<td>15</td>
<td>Involvement</td>
<td>Build planters in dead spaces identified close to student activity</td>
<td>Winter 2014</td>
<td>Facilities &amp; Infrastructure</td>
<td>LWT Student Volunteers</td>
<td></td>
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<tr>
<td>16</td>
<td>Involvement</td>
<td>Promote schedule of planned interventions with opportunities for active participation</td>
<td>2014-15</td>
<td>Volunteering Services Unit</td>
<td>UCLUnion UCL Communications</td>
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<td>17</td>
<td>Involvement</td>
<td>Run training sessions on urban biodiversity issues, opportunities and enhancements</td>
<td>Oct 15 Onwards</td>
<td>Academic Lead</td>
<td>Student Volunteers</td>
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<tr>
<td>18</td>
<td>Involvement</td>
<td>Recruit students to maintain new planters</td>
<td>Mar-15</td>
<td>UCLUnion</td>
<td>Volunteering Services Unit Bentham's Farm</td>
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<tr>
<td>19</td>
<td>Involvement</td>
<td>Map areas where interventions can be introduced and create rolling programme of introductions</td>
<td>Dec-14</td>
<td>Safety &amp; Sustainability</td>
<td>LWT UCL Stakeholders</td>
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<tr>
<td>20</td>
<td>Involvement</td>
<td>Set up active volunteering sessions to create various habitats e.g. insect hotels, loggeries</td>
<td>Spring 2015</td>
<td>Volunteering Services Unit</td>
<td>UCLUnion Property &amp; Accommodation</td>
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<tr>
<td>21</td>
<td>Food</td>
<td>Identify suitable location for bird-feeding station(s), and implement</td>
<td>Nov-14</td>
<td>Safety &amp; Sustainability</td>
<td>LWT Facilities &amp; Infrastructure</td>
<td></td>
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<tr>
<td>22</td>
<td>Food</td>
<td>Wildlife friendly planting – new plants to be introduced to existing beds when planted re-planting required</td>
<td>Over 5 years</td>
<td>Facilities &amp; Infrastructure</td>
<td>Student Volunteers Property &amp; Accommodation</td>
<td></td>
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<tr>
<td>23</td>
<td>Food</td>
<td>Construct new planters in areas identified in mapping exercise</td>
<td>Winter 2014</td>
<td>Facilities &amp; Infrastructure</td>
<td>LWT Property &amp; Accommodation</td>
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<tr>
<td>24</td>
<td>Guidance</td>
<td>Produce&quot;kit of parts&quot; for biodiversity interventions</td>
<td>Oct-14</td>
<td>Safety &amp; Sustainability</td>
<td>LWT Strategy &amp; Programme Delivery</td>
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<td>25</td>
<td>Guidance</td>
<td>Signpost to latest best practice advice via internal channels</td>
<td>Oct-14</td>
<td>Safety &amp; Sustainability</td>
<td>LWT</td>
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<tr>
<td>26</td>
<td>Monitoring</td>
<td>Create monitoring tool (based on green infrastructure tool)</td>
<td>Jan-15</td>
<td>LWT</td>
<td>UCL Stakeholders</td>
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<tr>
<td>27</td>
<td>Monitoring</td>
<td>Set up Citizen Science programme to allow volunteers to identify and record wildlife</td>
<td>Mar-15</td>
<td>Safety &amp; Sustainability</td>
<td>LWT GIGL</td>
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<tr>
<td>28</td>
<td>Monitoring</td>
<td>Submit records via iGIGL</td>
<td>Spring 2015</td>
<td>Safety &amp; Sustainability</td>
<td>LWT GIGL</td>
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<tr>
<td>29</td>
<td>Communication</td>
<td>Set up micro-site for up-to-date information on sightings, new developments, projects</td>
<td>Apr-15</td>
<td>Safety &amp; Sustainability</td>
<td>Portfolio &amp; Business Services</td>
<td>UCL Communications</td>
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<tr>
<td>30</td>
<td>Communication</td>
<td>Include monitoring reports on progress towards BAP targets within key internal publications</td>
<td>Oct-14</td>
<td>Safety &amp; Sustainability</td>
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<tr>
<td>31</td>
<td>Communication</td>
<td>Use screens to live broadcast videocam footage once inhabited</td>
<td>Spring 2016</td>
<td>Facilities &amp; Infrastructure</td>
<td>Portfolio &amp; Business Services</td>
<td></td>
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<tr>
<td>32</td>
<td>Communication</td>
<td>Maximise exposure via social media channels</td>
<td>Ongoing</td>
<td>Student Volunteers</td>
<td>UCLUnion</td>
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