University of Oxford Biodiversity Strategy 2016-2020

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Document Reference	EMS_S_0006	
Version	1	
Expiry Date	December 2020	
Distribution	Publicly available from www.admin.ox.ac.uk	
Managed by	Head of Environmental Sustainability sustainability@admin.ox.ac.uk	
Version	Approved by	Date/Minute Ref
Draft - Draft	Sustainability Steering Group	27 May 2016 minute 7
Draft - Draft	Planning and Resource Allocation Committee	11 October2016 minute (16)100C
Draft – Version 1	Council	31 October 2016 minute 19B

University of Oxford Biodiversity Strategy 2016-2020

Context and purpose

Through its activities and actions the University recognises it impacts on the environment; locally, nationally and globally. The University outlines its approach to managing these impacts in the Environmental Sustainability Policy in which it identifies biodiversity as one of 10 key areas to be addressed.

The University's Biodiversity Strategy 2016-2020 outlines how it will ensure the biodiversity within the functional estate is both protected and enhanced. It outlines the following:

- The priority areas that provide focus for its activity
- The objectives that enable it to demonstrate it is embedding best practice
- A practical approach to managing biodiversity across its estate

There is no simple set of measures that the University can adopt to ensure biodiversity on campus is protected or enhanced and complexity is at the very heart of biodiversity and habitat management.

In order to manage the inherent complexity associated with biodiversity the University has developed mechanisms that reflect a very pragmatic approach, starting with better understanding its living campus in order to protect and enhance it.

Priorities

The University has already identified that biodiversity is complex, it is also significant in terms of scale and scope. Clearly, confidence that the scale of activity is manageable during this period (2016-2020) is essential.

A Biodiversity Assessment Report has been commissioned which has identified four sites that will provide the main focus for activity during this period. These are:

- Old Road Campus
- Begbroke Science Park
- Iffley Road Sports Ground
- ROQ

The rationale for selection of these sites can be found in the Biodiversity Assessment Report (Appendix 1).

The University is aware that responsibility for biodiversity is not limited to the campus boundary. The goods and services that enable everyday business also have associated impacts. The response to managing these impacts can be found in the University Sustainable Procurement Strategy.

In addition to being clear about the scale of the activity the University also wants to be provide clarity about the focus for its efforts and so has identified the following four priorities:

Priority 1 – Protecting existing biodiversity

The University of Oxford estate covers a physically large and diverse patchwork of land holdings, many of which are in urban locations. The University is custodian of the associated biodiversity of these sites, which means it has a responsibility to ensure it understands their composition and value.

This responsibility is one of the underpinning principles of sustainable development so that existing biodiversity is conserved and protected for the benefit of future generations. For certain species or habitats, it may also be supported by legislation.

Priority 2 - Enhancing biodiversity where possible

The size and location of the University's estate also means it has a significant role to play in contributing to local and regional biodiversity efforts. This strategy has been developed with reference to several relevant policy documents including the UK Biodiversity Strategy and Oxford City Council's Biodiversity Action Plan 2015-2020. (See Appendix 1 for more details) These include commitments to enhancing as well as conserving biodiversity.

Priority 3 – Connecting areas for wildlife

Conservation efforts often create 'pockets' of biodiverse habitats by encouraging protection of even relatively small sites. Although valuable, these sites can be quite isolated from one another. It has become well recognised practice to provide links or corridors for wildlife between these sites, enabling them to support greater numbers and variety of species.

Across the University of Oxford estate there are opportunities to link up habitats in this way, joining up the University's own pockets of green spaces to benefit wildlife.

Priority 4 - Promoting engagement with biodiversity

Engagement with biodiversity is central to the success of any associated strategy. An understanding that the natural environment offers tangible benefits to everyone and that its conservation is a collective responsibility is vital.

The University of Oxford context offers us the opportunity to build staff and student capacity into our approach. Links between monitoring, research or conservation activities with academic programmes are in development. Activity at Wytham Woods is an excellent example of how we can access and learn from world-leading research activity in this area.

Objectives

Establishing guiding principles and associated processes is the foundation of the effective delivery of site-specific actions that will protect and preserve biodiversity on campus. These objectives have been developed to embed the University's approach at the same time as demonstrating habitat improvements.

Objective 1. Use site-specific plans to deepen understanding of campus biodiversity and drive improvements in sensitive habitat management at each location.

In addition to ensuring the University is meeting legislative requirements, using these plans in this way offers a robust and consistent mechanism to track improvements to the biodiversity at each site.

This will include, but may not be limited to: increasing the size of favourable habitats, increasing the numbers of species supported, improving protections for threatened species or habitats or encouraging threatened species or the development of improved habitats.

Objective 2. Increase and improve connections between biodiverse sites

Creating connections between, or joining up, habitats and sites increases opportunities for wildlife to move around the landscape. This involves making use of 'stepping stones', 'corridors' and other features to facilitate this movement. This requires a coordinated approach.

Objective 3. Catalyse opportunities for engagement with biodiversity

This will include, but may not be limited to: promoting access to biodiversity (sites or species) where appropriate, facilitating links between estates and academics to support research or monitoring activity, delivery of events promoting the benefits of biodiversity and provision of support during capital or routine maintenance projects.

Monitoring, Measurement, Evaluation and Reporting

A Biodiversity Action Group will be established to develop and oversee implementation of Biodiversity Action Plans for each of the four sites. This group will be chaired by the Head of Environmental Sustainability and will meet termly. Terms of reference and membership of this group will be agreed by the Sustainability Steering Group.

The Biodiversity Action Plans will be developed based on the content of the Biodiversity Assessment Report (Appendix 1). Although these plans are expected to be different to reflect the issues and opportunities each of the sites present they will each reflect the priorities outlined in the strategy.

The Biodiversity Action Group will provide updates to the Sustainability Steering Group for scrutiny of progress against the strategic objectives on an annual basis.

Appendix 1

Biodiversity Assessment Report

The assessment report for the Biodiversity Strategy 2016-2020, describes the current biodiversity in four specified areas and identifies actions that can be taken to improve biodiversity at each site.

Site meetings, walkovers and desk studies have taken place across four discrete sites that represent the range of environments typical of the functional (urban) estate:

- Radcliffe Observatory Quarter (ROQ)
- Begbroke Science Park
- Old Road Campus and
- Iffley Road Sports Ground

The desk study involved obtaining existing ecological records and data in relation to the four sites and immediate surrounding area (up to 250 m of the boundaries), from the Thames Valley Environmental Records Centre (TVERC) and from resources available on-line. The University Estates Sustainability team, or relevant Estates representative were also consulted for supplementary information that might assist in the assessment of each of the four sites.

The site visits took place during July 2013, within the ownership boundary of each of the four sites. The focus of the site visits was to identify habitat enhancement opportunities or potential to create ecological features to enhance biodiversity interest of the estate. For all sites, meetings were arranged with responsible staff, including: Walter Sawyer (Superintendent; and head of grounds maintenance at Begroke, Old Road Campus and ROQ), Eveline James (Estate manager at Old Road Campus), Jon Roycroft (Director of Sport; head of grounds maintenance at Iffley Road Sports Ground), and Thomas Heel (Facilities Manager; ROQ). The aims of the meetings were to discuss routine grounds maintenance, and explore possibilities for additional integration of biodiversity.

The rationale for selection of the four sites was as follows:

Old Road Campus. A medium-sized area of urban estate, with intensively managed borders and lawns, contrasting with areas of mature and less closely managed woodland edge to the north. The eastern half of the site is presently subject of redevelopment and presents an opportunity to encourage biodiversity enhancement through the retention and favourable management of existing mature features (e.g. trees, hedgerows and wall), and creation of new habitats through appropriate planting schemes and other recommendations.

Begbroke Science Park. Represents a large area of estate on the outside of the Oxford ring-road. Here, there is plentiful existing green space within the area that has been landscaped and is routinely maintained by the estate parks department. As such there are considerable opportunities for biodiversity enhancement through habitat creation and adjustments to existing maintenance practices.

Iffley Road Sports Ground. A small area of urban estate, yet still retaining some areas of biodiversity value. This site can be used as an example of how small areas can be managed to bring biodiversity gain despite the intensive land-use pressures associated with the general upkeep of the recreational facilities that define the site.

ROQ. Representative of a site that is in the process of being redeveloped and opportunities for integration of new habitats to benefit a range of flora and fauna can be explored, for example, through the University of Oxford Sustainable Buildings Philosophy (2011).

Based on the site meetings and walkovers, a more clear understanding has been ascertained of the land management pressures faced by the various estate managers and grounds maintenance staff. Equally it is now apparent that opportunities exist to enhance biodiversity across all manner of sites. Such opportunities are presented in Sections 4 – 7 of this report, and are based on the findings of the meetings, walkovers and also the information derived from the desk study. These will be developed into Biodiversity Plans (for the four sites), with actions, timings, targets and responsibilities.

This proportionate approach, which treats just four sites that form part of the University's functional estate, is appropriate since it will allow a review period of the four Biodiversity Plans, such that modifications / improvements can be made, as appropriate, and these would subsequently be rolled out across the remainder of the estate.

Old Road Campus

Old Road Campus is located south of Old Road in Headington, Oxford. It occupies an area of approximately six hectares. Since 1999 the site has developed as a location for University medical research. To this end it now hosts a number of large, modern research buildings, including (amongst others): the Old Road Campus Research Building (ORCRB), opened in 2008, as a new purpose built, state of the art research facility, the Richard Doll Building (housing epidemiological studies and clinical trials services), the Kennedy Institute of Rheumatology Building, the Nuffield Department of Clinical Medicine Building, and the Welcome Trust Centre for Human Genomics.

The University is seeking to complete the redevelopment of the Park Hospital property (Boundary Brook House) that occupies the eastern part of the site. The latest masterplan conveys a sensitively landscaped site which draws on the open and wooded character of the Park Hospital property.

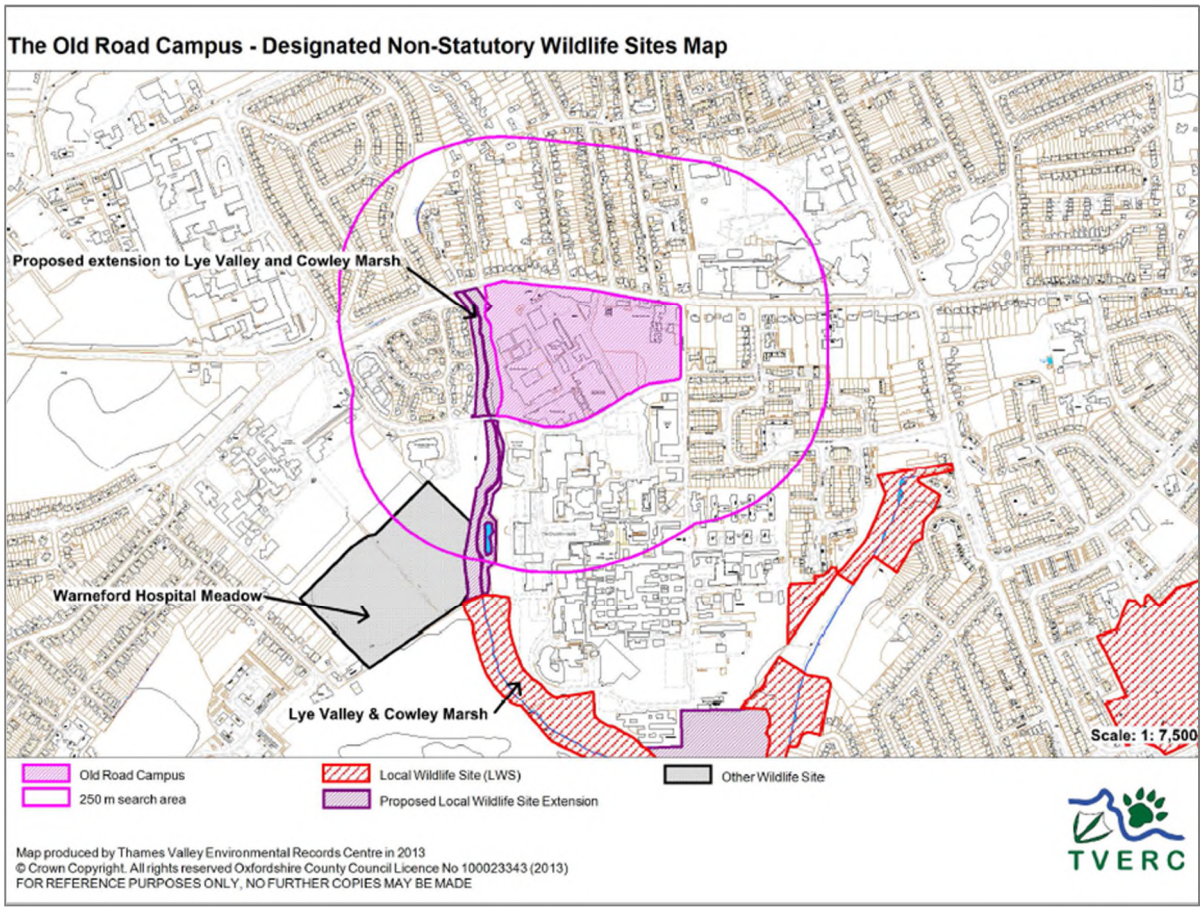
Desk Study

There are no statutory sites of nature conservation value within 250 m of Old Road Campus.

TVERC confirmed the presence of three non-statutory designated sites of nature conservation value within approximately 300 m of Old Road Campus. These include: Lye Valley and Cowley Marsh Local Wildlife Site (LWS), the Proposed LWS Extension to the Lye Valley and Cowley Marsh, and Warneford Hospital Meadow. A description of the LWS is given below.

Lye Valley and Cowley Marsh LWS An extensive area of land along the Lye Valley that encompasses the Lye Valley Local Nature Reserve in the north, the valley between the two parts of Lye Valley SSSI, parts of Southfield Golf Course and other land adjacent to the brook to Cowley Marsh in the south. Cowley Marsh had previously been notified as a separate site. The main interest in the site is associated with springs and flushes within the wet alder dominated woodland along the valley and the associated invertebrate interest. There is also a small area of reedbed. At the southern end there is a larger area of wet woodland, while in the golf course there are areas of lowland calcareous grassland. Cowley Marsh has areas of wet flushes amongst a sward that supports some lowland meadow species. UK PRIORITY BAP HABITATS: wet woodland, reedbed, lowland calcareous grassland.

The location of these sites is presented below.



Walkover Findings

Old Road Campus is effectively split into two parts, the first of these being the western part that has undergone significant redevelopment, and the eastern part that is subject to forthcoming redevelopment.

Western part

The core area of the western part comprises modern buildings, car parking, road infrastructure, hard landscaping (surfaced paths / walkways) and soft landscaping (planted borders, scattered trees and amenity lawns). There are few biodiversity features associated with the built environment of the western part; these being limited to a green wall on the Department of Human Genetics Building. A line of semi-mature hornbeam trees, underplanted with ivy is located close to this building, providing shade, and also cover for invertebrates. The selection of plants in the borders typically favours low maintenance shrubs, some of which provide cover for nesting birds (e.g. house sparrow, dunnock and wren), and some of which are valuable sources or pollen and nectar for insects (e.g. bees, butterflies, hoverflies, moths and beetles).

A short hornbeam hedge fringes the buildings along the western side (and also part of the eastern side). Beyond this, along the edge of the car park to the north west, a native hedge of hawthorn with wild cherry has been recently planted. These hedges will provide cover for all manner of creatures, whilst the flowers and fruits will be attractive to insects and birds respectively.

Along the northern border of the site, a wooded belt has been planted and encouraged to become overgrown and dense, to provide a visual screen to local residents along Old Road. Dead wood is evident in the wooded belt. It predominantly comprises native woody species, such as common lime, suckering English elm, hazel, privet, holly and maple. A woodland ground flora is developing here, which includes: wood avens, cow parsley, green alkanet, ramsons and wild arum. This wooded belt is likely to offer good habitat for nesting birds, refuge for small mammals and suitable feeding environment for a host of invertebrate species. The belt connects with the proposed extension to the Lye Valley and Cowley Marsh LWS (see desk study) so is likely to act as a valuable corridor for

dispersing plants and animals. Part of this wooded belt (the eastern half) is of lower value, since it comprises mostly evergreen and non-native shrubs that have been recently planted, including yew, laurel, box and shrubby honeysuckle.

A significant area of closely mown lawn lines the western boundary of the site, particularly to the south.The lawn is believed to have been established on old spoil imported to the site, so is likely to be variable, albeit predominantly base-rich. A diverse range of plants exists within this lawn, mostly typical of neutral and calcareous soils, including (but not limited to): cat's ear, autumn hawkbit, selfheal, creeping cinquefoil, cut-leaved crane's-bill, ox-eye daisy, red fescue, perennial rye grass and yellow oat grass. This lawn is cut on a fortnightly basis during the growing season, although mowing is relaxed during prolonged spells of hot, dry weather. This management regime may affect the ability for some of these species to set seed and also for them to be used by pollinating insects.

The southern boundary of the western part of the site comprises further soft landscaping, with well maintained grass lawns and low maintenance shrub borders, and a line of aspen trees.

Eastern part

The eastern part of the site (Park Hospital property), which is due for redevelopment has more of a parkland appearance. There are several clusters of mature trees to the south, west and northern periphery of this part. Species include London plane, sycamore, common lime, larch, beech, horse chestnut and false acacia. Most of these trees are proposed to be retained within the future development masterplan for the Park Hospital site. The understorey beneath the tree canopy of these trees is variable, comprising cow parsley, ivy and occasional dog's mercury in less well maintained areas to the south, and bare ground or closely mown lawn in more frequented areas further north.

Buildings are concentrated to the north and east of this eastern part, and some of these buildings are of considerable age and may support roosting bats. A sensory garden located to the north east has a series of raised beds planted with a reasonable diversity of plants attractive to pollen and nectar feeding insects, such as lamb's ears, lavender and Spiraea.

The boundaries to the eastern part include an old boundary wall to the north, and hedgerow to the east, south and west. The wall is approximately 3 m tall. It is presumably made of local stone, and a range of drought tolerant, shallow rooting plants are growing on the top of the wall, including white stonecrop, Oxford ragwort, ivy-leaved toadflax, ivy and various brome and fescue grasses. The hedgerow is well established and possibly of some age. It includes a number of native woody shrubs, including suckering English elm, maple, dog rose, hawthorn and blackthorn; and is likely to be a valuable local resource for insects and birds. The non-native and invasive plant snowberry, is also present in a stand on the eastern boundary.

Best Practice

Present maintenance of the site is necessarily focussed on achieving visually appealing grounds, at minimal cost, both in terms of capital expenditure and labour time.

The selection of some of the species used in the borders is entirely appropriate, with plants favoured by insects being selected, such as members of the daisy (compositae) family (e.g. Brachyglottis 'sunshine') which are well frequented by bees and butterflies, and larger, woody shrubs such as Mahonia, Cotoneaster1, Viburnum and Berberis that are all attractive to insects early in the summer, and go on to provide valuable crops of berries that are attractive to thrushes and blackbirds.

The wooded belt to the north receives minimal intervention, which has encouraged a diverse vegetation structure to develop and wide diversity of plants. These will in turn support a diverse array of birds, invertebrates and small mammals, including species in much need of encouragement such as the hedgehog. Dead wood should continue to be encouraged in this area, and when trees are periodically felled (due to health and safety reasons), as much wood as possible should be retained in situ, and the open space left beneath the tree canopy should be encouraged to regenerate naturally,

[1] Note. Certain species of *Cotoneaster* are invasive non-native plants listed under Schedule 9 of the Wildlife and Countryside Act, 1981, and planting of these must be avoided.

which can bring an instant flush of nectar and pollen rich plants such as bramble, green alkanet, foxgloves, hogweed and thistles.

Opportunities - Quick Wins

Biodiversity of Old Road Campus can be readily enhanced by adopting some (or all) of the recommendations presented in Table 1. Figure 1 indicates where such management might be focussed.

Table 1. Quick Win Recommendations for Old Road Campus

Activity	Detail
Tall grassland maintenance of main areas of lawn	Establish a fringe of longer grass and wildflowers next to shrub borders. Apply minimum 2 m width of fringe. Avoid use of chemical products Cut fringe in late March / early April; then again in August to encourage wildflowers. Cut inner core area of lawn as per standard practice (fortnightly during growing season). Consult Biodiversity Toolkit on Enhancing biodiversity through grounds maintenance.
Dead wood provision in northern wooded belt	Retain dead wood in all manner of aspects: fallen, standing, shaded and exposed. Consult Biodiversity Toolkit on Dead wood habitat provision.
Nest box provision	Erect bird and bat boxes on the mature trees in the wooded belt. Consult Biodiversity Toolkit on Nest boxes for wildlife.

Opportunities Long-Term Aspirational

Future opportunities for preservation and enhancement of biodiversity at Old Road Campus should be focussed on the retention and integration of biodiversity features within the eastern part of the site that is being redeveloped (see Figure 1). The Sustainable Buildings Philosophy should be a key driver, and this should influence the design process, with opportunities sought to protect and sustainably manage the existing features, such as the mature trees and boundary habitats (e.g. species-rich hedgerow and old wall to the north). Buildings that may support roosting bats would also require further consideration, especially if development proposals required their refurbishment or demolition.

The new development should include shrub beds of native species that are beneficial to wildlife, and where native species are not desirable, exotic shrubs known for their nectar, pollen and / or fruit should be included, such as Pyracantha, Cotoneaster, Viburnum, Japanese quince and Mahonia. Other features that can be incorporated into the new development could include a green roof and / or green walls planted with ivy or Clematis; freestanding or attached to buildings or boundary walls.

Begbroke Science Park

Begbroke Science Park is a University managed science park which conducts academic research, as well providing space for new high tech start up companies. Over the last decade the science park has grown to the extent that it is now home to over 30 commercial companies and 20 research groups from several Oxford University departments. The long term growth potential of the site and surrounding lands mean that it has significant strategic potential from a biodiversity perspective.

Begbroke Science Park is located off the Woodstock Road, approximately 5 miles north of Oxford city centre. Close to the rural village of Begbroke, the science park occupies approximately 8 hectares. The building architecture comprises a mixture of large, modern science buildings; complemented by

traditional buildings of historic value, such as the Jacobean farm house at the centre of the science park. Landscaped gardens, including a walled garden, extensive lawns and a perimeter tree screen planted in 2001 provide considerable green space within the confines of the park. The University estate boundary extends beyond the science park, incorporating arable farmland and associated hedgerows and watercourses.

In 2012 a new access road was constructed that provided better access to the A44 Woodstock Road. Future plans are to expand the academic and commercial research facilities on the site, which is likely to involve refurbishment of some existing buildings, and / or demolition and new build affecting modular and temporary buildings.

Desk Study

There is one statutory site of nature conservation value within 250 m of Begbroke Science Park. Rushy Meadows Site of Special Scientific Interest (SSSI) lies adjacent to the wider University of Oxford landholding, and approximately 350 m from the main landscaped area of the science park. The SSSI citation for the site is presented below.

Rushy Meadows SSSI
This site consists of a series of unimproved alluvial grasslands alongside the Oxford Canal, in which low-intensity, traditional management has produced rich meadow and fen communities containing several uncommon species. Meadow habitats of this type are now both rare and under threat in Britain. Rushy Meadows represents one of the few surviving sites in a district where such grasslands have declined in area following agricultural improvement and urban development.
The meadows are situated on terrace alluvium and gravels which have weathered to produce loamy soils of the Sutton 1 and Kelmscot series. Rushy Meadows are a particularly fine example of a Cynosurus cristatus-Centaurea nigra meadow and pasture community. They largely conform to a sub-community characterised by the presence of meadow vetchling Lathyrus pratensis, although this type grades into several other grassland and tall herb communities.
The meadows are dominated by hard rush Juncus inflexus occurring in an open, species-rich sward. In damper areas common, brown and hairy sedges Carex nigra, C. disticha and C. hirta and tufted hair-grass Deschampsia cespitosa are major components, occurring in association with soft and sharp-flowered rushes Juncus effusus and J. acutiflorus, fleabane Pulicaria dysenterica, fen bedstraw Galium uliginosum and marsh horsetail Equisetum palustre. In drier areas red fescue Festuca rubra, sweet vernal and tall oat grasses Anthoxanthum odoratum and Arrhenatherum elatius dominate, but broadleaved species such as tufted vetch Vicia cracca and meadow vetchling remain prominent.
Less common species present include pepper saxifrage Silaum silaus, devil's bit scabious Succisa pratensis, heath grass Danthonia decumbens, marsh valerian Valeriana dioica, betony Stachys officinalis, early marsh orchid Dactylorhiza incarnata and distant sedge Carex distans. Of particular interest is water avens Geum rivale which is very uncommon in the Thames basin.
Of the tall fen communities, the most extensive contains meadowsweet Filipendula ulmaria and great willowherb Epilobium hirsutum as well as many of the wet meadow species noted above. This grades into a second type dominated by sharp-flowered rush Juncus acutiflorus and watermint Mentha aquatica. A third is dominated by lesser pond-sedge Carex acutiformis, accompanied by common reed, reed sweet-grass and reed canary-grass Phragmites australis, Glyceria maxima and Phalaris arundinacea, false fox-sedge Carex otrubae and wild angelica Angelica sylvestris.
Tall, species-rich hedges containing wayfaring tree Viburnum lantana, guelder rose V. opulus, hazel Corylus avellana, crack willow Salix fragilis and sallow S. cinerea enclose and sub-divide the meadows.
A broad, shallow, eutrophic ditch running north-south through the site is dominated by narrow-leaved water parsnip Berula erecta, erect bur-reed Sparganium erectum, water mint and reed sweet-grass. A balancing reservoir within the site supports dense stands of the uncommon marsh arrow-grass Triglochin palustris and bristle club-rush Isolepis setacea.

Notable bird species occurring at this site include breeding snipe and grasshopper warbler and over-wintering water-rail.

TVERC confirmed that there are no non-statutory designated sites of nature conservation value within approximately 250 m of Begbroke Science Park.

Walkover Findings

The central core of Begbroke Science Park comprises a mix of modern and traditional buildings, car parking, road infrastructure and hard landscaping (surfaced paths / walkways); all broken by scattered areas of soft landscaping. This soft landscaping is mostly limited to low maintenance ornamental shrub beds and frequently cut amenity lawns that are of limited biodiversity value. However, the more interesting parts of this core area can be categorised as follows:

Occasional shrubby borders include insect friendly species, such as curry plant and Brachyglottis 'sunshine'; both members of the daisy (composite) family.

A walled garden, located to the south (next to the farm house) has dense ornamental shrub beds, and walls covered in ivy. These walls provide thick enough cover to offer nesting opportunities for common garden birds such as house sparrow, robin, blackbird, dunnock and wren. Maintenance of the ivy covered walls is restricted to removal of any ivy that creeps over the tops of the walls.

An ornamental pond stocked with fish, located close to the main reception building. Despite the large number of fish in the pond, it still teams with life, such as the many common blue and blue-tailed damselflies that were observed during the walkover. The dense coverage of marginal, emergent and submerged aquatic plants (e.g. hornwort, reedmace, water mint, bogbean and water horsetail) evidently provide sufficient cover for pond invertebrates.

There are many scattered trees around the site including semi-mature and mature non-native and native trees. Some of the larger specimens include frequent Scot's pine, Austrian pine, black poplar, western balsam poplar and Lombardy poplar; and occasional pedunculate oak and ash. Mature fruit trees (apple and pear) are also located throughout the grounds.

The more traditional buildings across the science park, such as the Jacobean farm house, the reception building, and other linked ancillary buildings in the south western part of the site are generally well maintained and in excellent state of upkeep. Nonetheless, opportunities are likely to exist for roosting bats, where tiles have slipped, or in gaps between soffit boards. On certain buildings, wisteria has been trained up the walls, which will provide nesting habitat for birds, and also a nectar source for insects in mid spring.

Fringing this core area are several hedgerows; to the south west, west and in isolated stretches to the north is a mature beech hedge, maintained between 2 to 3 m in height; and to the south east and east is a recently planted hedge of hawthorn, hazel, maple, blackthorn and holly, that is maintained to ca. 1.5 m height. Whilst these hedges are well maintained, they may nonetheless provide nesting opportunities for garden birds (especially the beech hedge), as well as cover for invertebrates.

Beyond the main built area of the science park, a wooded belt of young mixed broadleaf plantation follows the inner perimeter of the park and is bounded by a post and wire fence. The plants selected are native deciduous species, and include various willows, pedunculate oak, common lime, blackthorn, hawthorn, wild cherry, maple, holly, wayfaring tree, dogwood, guelder rose and dog rose. These have attained considerable structure over the last twelve years, since they were planted in 2001, with the belt attaining a height in excess of 4 m. Hazel also occurs in the wooded belt, and is coppiced on a rotation by the estates parks department. This coppicing has opened up parts of the wooded belt, and will eventually favour ground flora more typical of woodland. Overall the wooded belt provides excellent biodiversity value, for a diverse range of species such as birds, small mammals, invertebrates and reptiles (especially in south-facing grassy margins for the latter).

Several large swathes of short, mown amenity grassland are located between the wooded belt and core area, especially to the north and west. This grassland is cut on a fortnightly basis during the growing season, although mowing is relaxed during prolonged spells of hot, dry weather. This

rigorous maintenance has favoured the establishment of fine-leaved fescues across the grassland, with little other vegetation present, so is of low nature conservation value.

The access road constructed in 2012 that connects the science park to the A44 Woodstock Road is bordered on both sides by a wide road verge, swale and hedgerow, planted in early 2013. The road verge is mown to maintain a tidy appearance to those accessing the science park. However, the swale and hedgerow margins are not maintained, and at the time of the walkover were covered in white clover, thistles and mugwort; all beneficial to pollen and nectar feeding insects.

The former access road, which is located to the south of the science park is bordered by a line of walnut within a closely mown lawn, and inside this, species-rich hedgerows (either side of the road), that are routinely maintained by winter cutting. Twelve species of woody plant were recorded from the hedgerows, indicating that they may be of considerable age. The hedgerow on the eastern side of road is however, choked with ivy, to the detriment of the native woody hedgerow species.

Outside the confines of the science park, the wider University estate includes arable fields spreading out in all directions. Whilst these fields are likely to be of low value to wildlife, a series of mature hedgerows (albeit fragmented in nature) provide a network of corridors linking to the science park.

Best Practice

Present maintenance of the site is necessarily focussed on achieving visually appealing grounds, at minimal cost, both in terms of capital expenditure and labour time. The wooded screen that bounds the science park from all aspects is an important landscape feature and has already attained considerable size and structure. This varied habitat structure, together with the selection of a wide diversity of native woody species has resulted in a feature of significant biodiversity value.

The management of hazel coppice within the tree belt is a fine example of best practice, whereby hazel stems are cut to the base on a rotational basis. The cut stems are then reused by the estate parks department as canes for use at other sites across the university estate. This sustainable form of hazel coppice management should continue.

Another fine example of sustainable use of resources relates to the hot heap that is located just outside the confines of the science park, to the east. Here, all organic material (e.g. cuttings, leaf sweepings, tree and shrub clippings etc.) derived from site maintenance by the parks department is composted. The compost is then re-used as a mulch or soil improver, and this helps reduce, or eliminate altogether the need for costly herbicide and fertiliser application.

The walled garden, with its ivy covered walls is a good example of how site maintenance has applied an appropriate light touch to the maintenance of the walls. The ivy is rightly considered not to be of any detriment to the walls. Indeed, it may even protect the walls from exposure to harsh sunlight and frost. However, where the ivy has reached the tops of walls, this is selectively removed to maintain a tidier appearance and prevent any potential damage to coping stones, which may be more prone to damage from suckering ivy. Its retention is also further warranted since this may form an important roosting or feeding perch for bats.

Opportunities - Quick Wins

Biodiversity of Begbroke Science Park can be readily enhanced by adopting some (or all) of the recommendations presented in Table 2.

Table 2. Quick Win Recommendations for Begbroke Science Park

Activity	Detail
Tall grassland maintenance of main areas of lawn (bordering	Establish a fringe of longer grass and wildflowers next to wooded belt, especially in northern and south western parts, and along former access road. South-facing fringes will be of greatest benefit to reptiles. Apply minimum 5 m width of fringe. Avoid use of chemical products.

wooded belt and either side of former access road to south)	Cut fringe in late March / early April; then again in August to encourage wildflowers. Cut inner core area of lawn as per standard practice (fortnightly during growing season). Plug plant wildflowers such as yellow rattle, common knapweed, field scabious, bird's-foot trefoil and red clover to provide instant diversity to the sward. Consult Biodiversity Toolkit on Enhancing biodiversity through grounds maintenance.
Encourage hedgerow either side of the road to develop greater structural diversity	The former access road to the south of the site no longer takes road traffic (except in emergencies). Allow hedgerow to at least double in size (presently 1.2 m high x 1 m wide). Replace dead ands weakened sections choked in ivy as appropriate, interplanting with native species already occurring in the hedgerow. Cut the hedgerow in late winter.
Dead wood provision in and near wooded belt	Retain dead wood in all manner of aspects: fallen, standing, shaded and exposed. Consult Biodiversity Toolkit on Dead wood habitat provision.
Hedgehog and toad hibernacula	Retain fallen leaves in leaf catches, positioned on edges of wooded areas. Leaf catches may be constructed of dead wood to maximise benefits for other fauna and fungi. Consult Biodiversity Toolkit on Dead wood habitat provision.
Nest box provision	Erect bird and bat boxes on mature trees within the science park, especially those close to corridors of dispersal beyond the science park. Given its more suburban setting, it would be advantageous to provide barn owl boxes on poles to encourage this increasingly scarce and enigmatic species which is likely to feed in the area. Consult Biodiversity Toolkit on Nest boxes for wildlife.
Fruit tree maintenance and provision for invertebrates	There are a number of fruit trees at Begbroke Science Park. These can be important for wildlife providing specialist niches for certain beetles associated with wood decay. Leave an uncut grassy margin beneath the drip zone of all fruit trees and resist temptation to remove standing dead wood. In autumn, when the fruit falls these will offer a bounty of food for small mammals, birds and invertebrates, including species such as red admiral that is attracted to fermenting fruit. Leave all fallen fruit in-situ for wildlife; or if removal is required, move the fruit to the edge of the wooded belt.

Opportunities Long-Term Aspirational

Future opportunities for preservation and enhancement of biodiversity at Begbroke Science Park should seek to provide new features that can greatly boost biodiversity. The creation of new ponds would be a valuable addition to the landscape of this site in particular.

Ponds are easy to create, can instantly attract wildlife, and provide a good source of community engagement. Accordingly, it is recommended that a wildlife pond (or series of ponds) is created in the grassland in the south western part of the site. The design of the pond will be dictated by the properties of the underlying substrate (e.g. whether water retaining clays are available), which will determine whether or not a liner is required to hold water throughout the year. Shallow margins should be provided, especially on a larger pond, since these margins provide excellent habitat for aquatic invertebrates and plants.

The supplier of wetland plants selected for any ponds should be asked to provide a guarantee that all plants are native and of local provenance, and importantly, are not contaminated with invasive species (e.g. New Zealand pygmyweed Crassula helmsii). The use of pre-planted coir pallets / mats can assist in creating a rooting substrate into which plants can become established (especially important for lined ponds). There is a lengthy list of wetland plants associated with the nearby SSSI, Rushy Meadows SSSI. The choice of plants selected should give consideration to this, and aim to recreate some patches of similar wetland habitat, albeit on a much smaller scale.

Further information may be obtained by consulting the Biodiversity Toolkit on Pond creation.

Iffley Road Sports Ground

Oxford University Sport offers sporting facilities and services to both students and members from the local community. The main centre for this is the Iffley Road Sports Ground, which forms part of the University estate. The sports ground is located off the western side of Iffley Road, approximately 1 km from the city centre. The site is largely open, comprising a running track and tennis courts. Buildings are positioned mostly to the northern and western perimeter of the site. The site occupies an area of approximately four hectares.

The University of Oxford has received planning permission to develop its sports facilities at the site. This includes the development of an indoor tennis centre. The Design and Access Statement for this describes the incorporation of a sedum roof to the building. It is expected that this, together with other landscaping will soften the appearance of the tennis centre, and contribute to the biodiversity of the locality.

Desk Study

There are no statutory sites of nature conservation value within 250 m of Iffley Road Sports Ground.

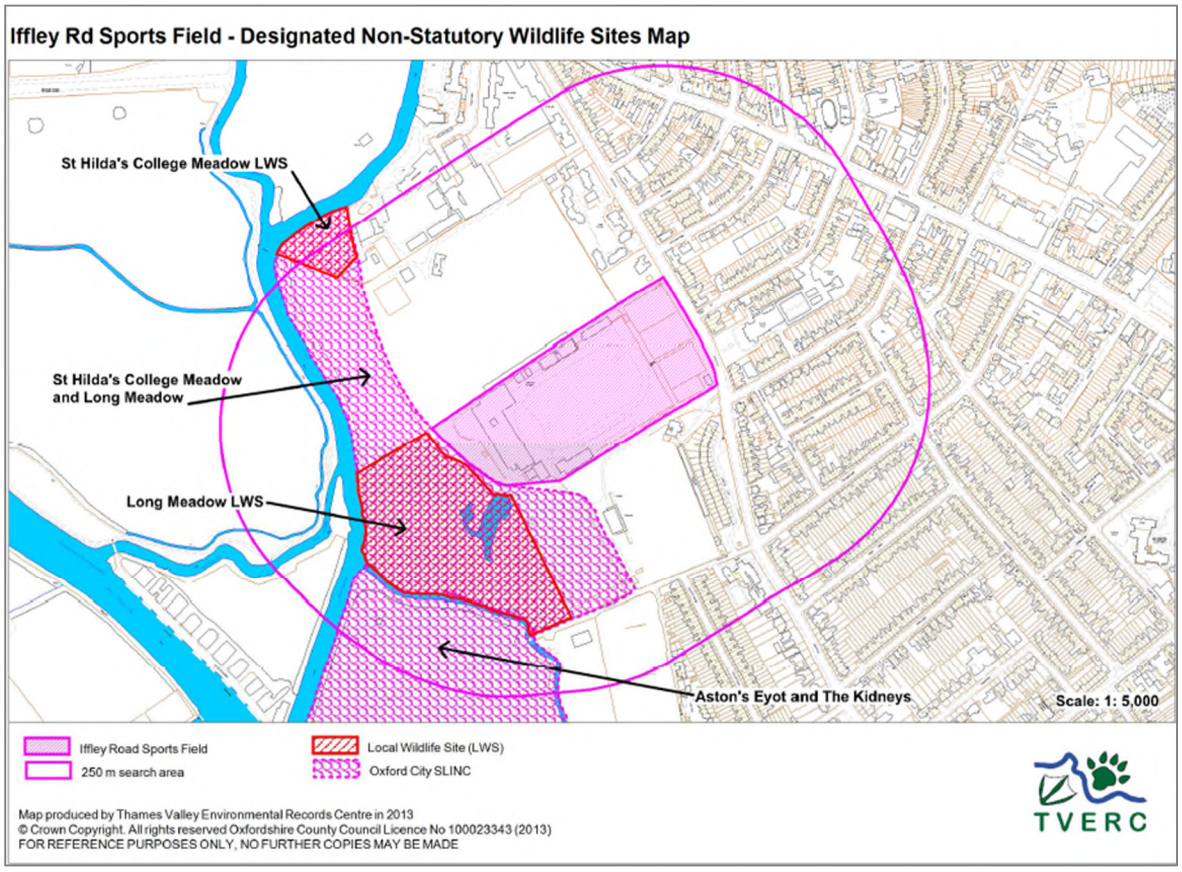
TVERC confirmed the presence of three non-statutory designated site of nature conservation value within approximately 250 m of Iffley Road Sports Ground. These include: Long Meadow LWS, St Hilda's College Meadow LWS and Aston's Eyot and the Kidneys Site of Local Importance for Nature Conservation (SLINC). Full descriptions of these sites are given below.

Long Meadow LWS
Long Meadow was originally selected as a Local Wildlife Site due to the presence of lowland meadow habitat, a habitat which has become very rare in Britain because more than 95% of traditional hay meadows have been lost over the last forty years to intensive agriculture. This neutral grassland site lies beside the River Thames. At present the site is not managed and has become rather overgrown with rank grasses and meadowsweet. A chain-link security fence divides the site into a northern and southern section. In 2009 the drier northern section which includes an area used for hammer and discus throwing was removed from the site as recent found that the lowland meadow habitat had been largely lost. The southern area was retained. This supports an extensive area of fen habitat with areas of swamp dominated by reed sweet grass, reed canary-grass and lesser-pond sedge. There is a silted up pond where bulrush dominates. Grass snakes are abundant in this area. The whole of the site, combined with the adjacent St Hilda College Meadow, forms an Oxford City Site of Local Importance Nature Conservation.
KEY UK BAP HABITAT: Fen
PRIORITY UK BAP SPECIES RECORDED: Reed bunting
St Hilda's College Meadow LWS
This site is a small meadow (0.6 ha) in the grounds of St Hilda's College. The meadow is bounded by the River Cherwell to the north. The main interest of the meadow is the population of snake's-head fritillaries, several hundred plants of which were flowering in 2001. The meadow is a nice example of a traditional hay meadow, a habitat which is now rare in Britain and a priority for conservation. Other typical wet grassland species include creeping buttercup, meadowsweet, ragged robin, ox-eye daisy, red fescue, Yorkshire fog and cock's-foot grass. In the past, devil's bit scabious, pepper saxifrage and great burnet have been recorded from the meadow. In 1992 wildflower seed was sown on the meadow

introducing several species which are less appropriate for a traditional hay meadow; these include kidney vetch, wild carrot and salad burnet.
The meadow is surrounded by willows (species unknown), some of which have been recently pollarded, hybrid poplars, hawthorn, alder, ash and sycamore. The meadow is managed for its botanical interest. The central area where the fritillaries occur is mown once a year in late July and the clippings are raked up and removed from the site. The meadow is too small to consider grazing as an option. A wide swathe around the edges of the meadow is mown frequently as a lawn to enable access for College residents.
PRIORITY UK BAP HABITAT(s): Lowland meadow
NATIONALLY SCARCE (NSC) SPECIES RECORDED: Snake's head fritillary
TYPICAL TRADITIONAL HAY MEADOW SPECIES RECORDED
Snake's head fritillary, black knapweed, meadowsweet, lady's bedstraw, meadow vetchling, ox-eye daisy, ragged robin, bird's-foot trefoil, meadow buttercup, lesser celandine, creeping jenny. In addition, devil's bit scabious, great burnet and pepper saxifrage have apparently been reported in the past, but were not found in May 2001.
Aston's Eyot and the Kidneys SLINC
Aston's Eyot is a 12 ha island, bordered on two sides by the Rivers Thames and Cherwell, and on the third side by a wide ditch (Shire Lake Ditch). Until the mid-nineteenth century Aston's Eyot was a low-lying meadow. However, between then and the 1950's the area was used as a rubbish tip and the level of the ground was raised by about 1metre. Fragments of glass are found on the surface and the soil has become much enriched by its use as a rubbish tip. Aston's Eyot is owned by Christ Church and until 1984 it was managed by Oxford City Council under an agreement with the College. A number of paths meander across the site and these are used by the general public for informal recreation and dog walking. Problems with public access include abuse of the site by motocyclists and littering.
Since the tip was closed, an interesting mosaic of habitats has developed which now support a good diversity of species for such an urban site. There are small areas of herb-rich unimproved grassland near the River Thames and alongside the paths crossing the site. These areas are currently kept open by rabbit grazing and hold species such as bird's-foot trefoil, red bartsia, clovers and rough hawk's beard and unusual weed species such as soapwort and mullein. The taller vegetation has good numbers of grasshoppers and crickets including dark bush cricket, and butterflies including marbled white, meadow brown, ringlet and common blue. Several unusual moths are found at Aston's Eyot include buttoned snout which is a priority BAP species (foodplant wild hop) and scarce vapourer.
Substantial areas of hawthorn, blackthorn, elder, bramble and wild rose scrub have developed over much of the site. The scrub provides important breeding habitat for birds including bullfinch and song thrush, species which are on the Red List of birds of high conservation concern in Britain. Other species found at Aston's Eyot which are likely to use the scrub include blackcap, whitethroat, lesser whitethroat, garden warbler, willow warbler, chiffchaff and long-tailed tit.
Willows and poplars line the River Thames and Cherwell. Some of these have been pollarded recently. The river banks are quite well vegetated with species such as common reed, yellow flag iris, great willowherb, fool's water cress and meadowsweet. Small clearings have been made along the bank of the Thames to allow access for anglers. Shire Lake Ditch was dredged in 2000/01 and most of the bankside vegetation cleared, but this was beginning to revegetate in summer 2001.
The northern end of Aston's Eyot has developed into a more mature willow/alder dominated woodland. There are a good number of decaying and fallen trees which provide important habitat for birds such as green and great spotted woodpecker. Song thrush (another Red List species) breeds in the woodland area, also willow tit, goldcrest, greenfinch, chaffinch, goldfinch.
The eastern side of Aston's Eyot is a plantation of broad-leaves including horse chestnut, poplar, wild cherry, oak, field maple, hazel, hawthorn and Scots pine. These trees, which were planted in 1982/1984, have grown well but the trees are spaced very close together so that the canopy is closed and the ground flora and shrub layer are very sparse.
To the west of the plantation is an open area dominated by nettles and other weeds including fat hen, thistles, burdock and ragwort. This area was cleared in the past to permit access for bottle diggers.

PRIORITY UK BAP SPECIES RECORDED: Song thrush, bullfinch, buttoned snout (moth)
NATIONALLY SCARCE (NSC) SPECIES RECORDED: Scarce vapourer (moth)
BIRDS OF CONSERVATION CONCERN (BoCC) RECORDED:
Red List Species: Song thrush, bullfinch, tree creeper (breeding), Linnet (winter visitor), reed bunting (breeds locally)
Amber List Species: Dunnock, green woodpecker, willow tit (breeding), redwing, fieldfare, snipe, woodcock, water rail (winter visitors), kingfisher, green woodpecker (breeds locally)

The location of these sites is presented below.



Walkover Findings

At the heart of Iffley Road Sports Ground lies the running track, inner sports field and outer jumping lanes. These occupy just over half of the site. The remaining area is occupied by outdoor tennis courts, to the east, and buildings (sports stand, sports centre and gymnasium). Discrete shrub borders, privet hedgerow and a tall cypress hedge are positioned along the western, northern and southern borders respectively.

The sports field has low species diversity, such that might be expected of sports fields that receive necessary applications of herbicide and fertiliser. Applications are kept within the recognised levels identified by the Institute of Groundsmanship.

The buildings are generally of little value for wildlife. They are fairly modern, in good upkeep, and as such offer limited opportunities for roosting bats or nesting birds. Notwithstanding this, one wall, to the west of the site is covered in ivy, which will provide a local source of nectar late in the year for insects, and may potentially be used by roosting bats and nesting birds.

The shrub borders are typical of other University estate, comprising low maintenance shrubs, some of which are favourable to pollen and nectar feeding insects (e.g. Mahonia and Cotoneaster). Some well maintained areas of amenity grassland also occur to the west, which, despite the frequent cutting

regime still harbour a reasonable diversity of lawn plants, including: daisy, selfheal, black medick, white clover, creeping cinquefoil, creeping buttercup, Yorkshire fog and perennial rye-grass.

Two bands of unmanaged grassland occur on the eastern boundary of the site, and between the tennis courts and running track and sports field. This unmanaged grassland is regarded by grounds management as being untidy and of limited value to biodiversity. The grassland is dominated by tall, rank grasses, such as cock's-foot and false-oat grass, with occasional forbs such as ribwort plantain, field bindweed, broad-leaved dock, ragwort and spear thistle. This contrasts with the small corner of infrequently managed grassland to the south east of the running track and sports field, which supports a greater range of grasses (e.g. smooth meadow-grass, Yorkshire fog, meadow barley, Timothy, creeping bent) and forbs (e.g. selfheal, creeping buttercup, red clover and white clover).

To the north of the site, between the tennis courts and sports centre, there is a sheltered area of untidy, disturbed ground used for storage of materials and machinery. Here there is a high diversity of self-sown plants, many of benefit to insects (pollen and nectar feeding) and birds (seed & berry feeding), such as butterfly bush, cotoneaster, bramble, teasel, various thistles, borage, bristly ox-tongue, Canadian fleabane and scentless mayweed. A large concentration of bumblebees was observed in this part of the site, and several butterfly species, including tortoiseshell, small white, speckled wood and red admiral.

Best Practice

The ivy covered wall demonstrates that best practice has been followed in allowing the ivy to cover the wall to the benefit of local wildlife. The flowers produced only by well-established stands of ivy provide an excellent source of nectar late in the season, which is a valuable source for certain moths, butterflies, solitary bees and bumblebees. The dense cover will also provide nesting opportunities for species such as blackbird and robin, as well as foraging opportunities from a rich crop of berries. Bats may also roost within the ivy or perch whilst feeding.

In managing a site such as this, where space is at a premium, and a tidy visual appearance is paramount, there is a temptation to micro-manage every available space. However, marginal areas of the site that have received reduced management support a greater diversity of plants, and consequently, greater diversity of associated fauna. The areas identified during the walkover are testament to this.

Opportunities - Quick Wins

Biodiversity of Iffley Road Sports Ground can be readily enhanced by adopting some (or all) of the recommendations presented in Table 3.

Table 3. Quick Win Recommendations for Iffley Road Sports Ground

Activity	Detail
Tall grassland maintenance of main areas of lawn (especially to west, which links with local wildlife sites)	Establish longer grass and wildflowers on western and eastern borders of site. Maintain longer grass to south east of sports field. Avoid use of chemical products. Cut in late March / early April; then again in August to encourage wildflowers. Plug plant wildflowers such as yellow rattle, common knapweed, field scabious, bird's-foot trefoil and red clover to provide instant diversity to the sward. Consult Biodiversity Toolkit on Enhancing biodiversity through grounds maintenance.
Create low maintenance, aesthetically appealing border to	Select a range of native and non-native shrubs and perennials based on their attractive flowers and source of pollen, nectar and berries. Choice of native species may include: guelder rose, wayfaring tree, dogwood and buckthorn.

west of tennis courts	Choice of non-native species may include: Echinops, Salvia, Verbena, lavender, Pyracantha, Cotoneaster, Japanese quince and Mahonia. Mulch with organic material derived from Begbroke in autumn or spring.
Invertebrate corner	Set an area aside for invertebrates, making use of a hidden sheltered spot in which to position dead wood, a matrix of bare ground, and bee / invertebrate nesting boxes. Fence the area and install an interpretation board to engage the public on this initiative.
Nest box provision	Erect bird and bat boxes on buildings, especially those to the west, to encourage dispersal connected to the local wildlife sites. House martin and swift boxes would be desirable given the proximity of the site to River Thames and connected LWSs where ample foraging for insects can be had. Consult Biodiversity Toolkit on Nest boxes for wildlife.

Opportunities Long-Term Aspirational

Future opportunities for biodiversity at Iffley Road Sports Ground should be focussed on the enhancements that can be achieved through proposed new development, such as the tennis centre. The Sustainable Buildings Philosophy should be a key driver, and this should influence the design process, with opportunities sought to provide new features that can greatly boost biodiversity. The choice of plants used for any soft landscape borders should be native species, or non-native species recognised as important sources of pollen, nectar and berries for insects and birds.

The possibility of establishing a green wall (e.g. ivy, clematis or wisteria) using a self-supporting or fixed trellis along a south facing wall of the sports centre should be considered. This can help contribute to targets in the Sustainable Buildings Philosophy.

Radcliffe Observatory Quarter (ROQ)

The ROQ is a 10-acre site located in central Oxford. It is bound by the Woodstock Road, Somerville College, Walton Street, Observatory Street, and Green Templeton College. It is unusual in that it forms the last remaining large plot of land available for development in the historic heart of the city, and is presently undergoing a massive transformation, as the entire site is in the process of development, involving a combination of demolition and new build, and refurbishment of certain listed buildings.

The masterplan for the site was agreed following consultation within the collegiate University and the local community, as well as with interest groups and statutory bodies such as English Heritage. The long-term vision has been to create a vibrant academic community that can benefit from state-of-the-art facilities and enhanced opportunities for collaboration. The development is informed by the University's own policies, those of Oxford City Council and policies relating to construction or town planning that are set by the Government.

The masterplan proposes an arrangement of building envelopes around a pattern of internal streets, framing views of the Observatory. In respect of ecology, it recognises that there would be no significant effect on habitats, and could provide an opportunity to enhance the biodiversity of the site.

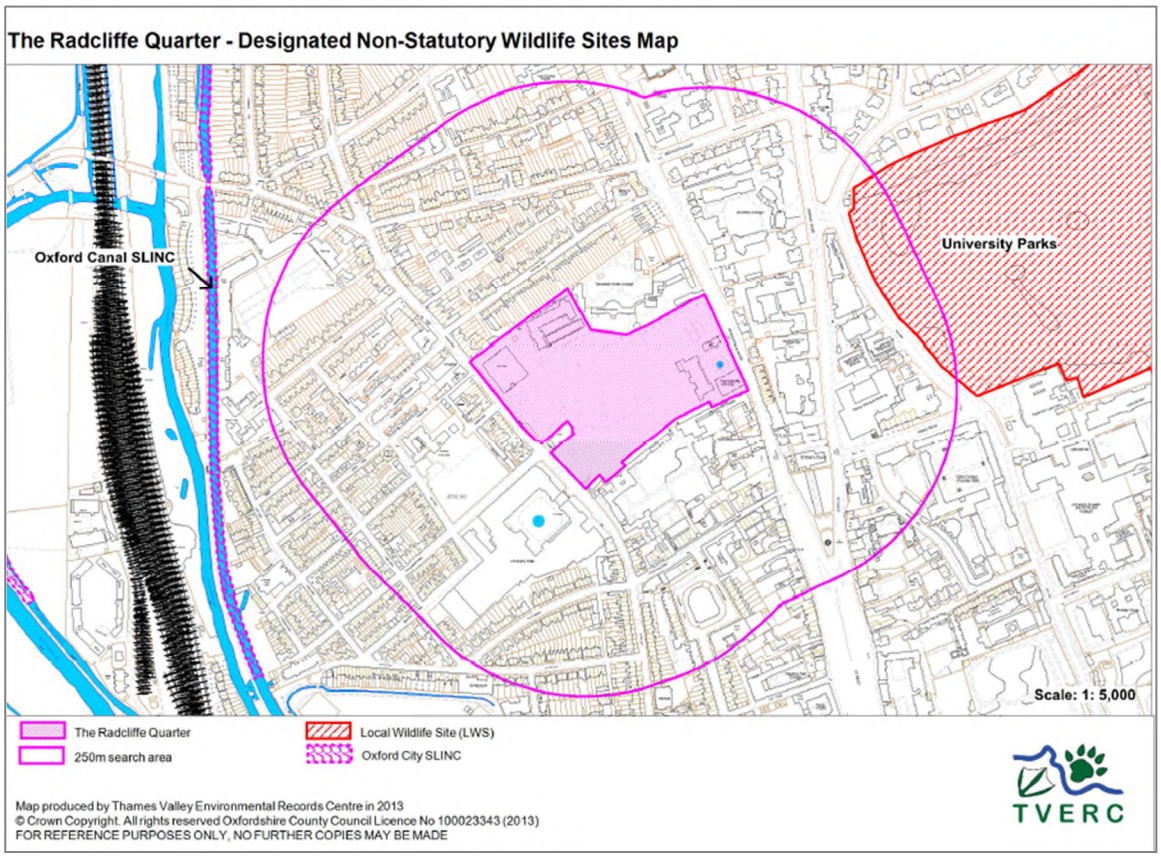
Desk Study

There are no statutory sites of nature conservation value within 250 m of ROQ.

TVERC confirmed the presence of one non-statutory designated site of nature conservation value within approximately 250 m of ROQ, this being University Parks LWS. The full description of this LWS is given below.

University Parks LWS
University Parks is an area of historic parkland located next to the River Cherwell in Oxford. There are many old trees in the Parks though many are not native species. The site is a good area for birds within an urban setting with all three species of woodpecker recorded here. A number of nationally scarce insects have also been recorded here. The uncommon white-legged damselfly has been recorded in the vicinity of the Cherwell.

The location of University Parks LWS is presented below.



Walkover Findings

The ROQ site commands an entirely urban setting. Approximately three quarters of the site is presently undergoing construction. The only areas that are completed or nearing completion include the Humanities Department (to the south east), Radcliffe House, and Gibson and Harkness Buildings (to the north), the latter of which may undergo future redevelopment.

Soft landscaping can be seen in isolated strips surrounding Radcliffe House, and recently planted borders are located around the Humanities Department. It is understood that the estate parks department has responsibility for the planting and subsequent upkeep of many of the borders at ROQ. The selection of plants at the Humanities Department presently combines shrubs and herbaceous perennials that are mostly non-native, but nonetheless attractive to pollenating insects.

A fountain which forms a centrepiece to the entrance to the Humanities Department is presently unplanted. It is understood this is unlikely to be planted due to the water chemistry of this feature.

A sedum roof has been established on the Mathematical Institute. This is likely to provide a valuable source of pollen and nectar, especially for bees.

A tall, stone wall surrounds the ROQ at its northern, eastern and western sides. Some plants are growing on the side or on top of the wall (e.g. butterfly bush, ivy, ivy-leaved toadflax, red valerian, biting stonecrop, yellow corydalis, and various fescue and brome grasses), where they have presumably avoided being cleared as part of the wall maintenance (refer Photo ROQ3).

Best Practice

The selection of species used in the borders is entirely appropriate, with plants favoured by insects being selected, such as box, globe thistle, geranium, fleabane, clary and lavender.

The choice of a sedum roof on the Mathematical Institute Building has been influenced by the University's aspirations to achieve high BREEAM credits for the development. Such target setting should be to the benefit of the local bee population, especially when compared to the hard landscape that previously occupied the site.

Opportunities - Quick Wins

There are few quick wins to be had associated with biodiversity enhancement at the ROQ site. This is largely due to the fact that most available green space is already being positively managed (see best practice, above), and there are strict pressures on all other spaces.

The perimeter wall can be enhanced for biodiversity by the addition of an attached or free-standing living façade or wall.

To achieve this, climbers and clingers such as ivy, clematis, ivy-leaved toadflax, pellitory-of-the-wall and yellow corydalis, and wall ferns (e.g. wall rue and maidenhair spleenwort) should be allowed to spread across the faces of the wall at all aspects within the ROQ. The top surface should also be allowed to vegetate naturally, with non-harmful, shallow-rooting flora such as fine-leaved grasses (Festuca and Bromus spp.), stonecrop, Oxford ragwort and snapdragon all encouraged. Selective removal of certain species such as red valerian and butterfly bush would be appropriate, on a rotation, since these perennials have penetrating roots that, over time, can promote the deterioration of the wall, especially if established in cracks where soil can accumulate. There are some fine examples of vegetated walls in Oxford, and the ROQ building can readily complement these important resources for invertebrates and birds.

Opportunities Long-Term Aspirational

The Sustainable Buildings Philosophy is likely to be a key driver in the future fine-detail design process affecting subsequent phases of development at the ROQ. Opportunities should be sought to establish further green infrastructure across the site, and the selection of plants in new planting schemes should be predominantly native, and where exotic species are favoured, these should complement those already used at the Humanities Department, which are of value for pollenating insects.

It is understood that an observatory garden will be created in years to come. Whilst this is intended to pay homage to its location next to the Radcliffe Observatory Building, it provides a real opportunity to show off with an innovative planting scheme, using sensory plants that combine texture, colour and smell, and at the same time create a buzz with interest for bees and butterflies throughout the year. The inclusion of a water feature would further promote biodiversity interest of this area, using a variety of sedges, rushes and grasses that mirror some of those present at the pond within the University Parks LWS.