

www.oxford.gov.uk



**Oxford City
Council Local
Plan 2036**

*Local Sites of
Biodiversity Importance*

BACKGROUND
PAPER

INTRODUCTION

1. The statutory framework for biodiversity combines 3 approaches: (i) the protection of designated sites; (ii) the protection of particular species irrespective of where they are found; and (iii) the need to have regard to biodiversity generally, irrespective of whether protected sites or species may be affected. The Wildlife and Countryside Act 1981 (as amended) is the principal wildlife-protection legislation in Great Britain. It includes provisions for important habitats to be designated and protected as SSSIs, and protects individual species and the places they use for shelter and protection.
2. Since the consultation on the Preferred Options in June/July 2017, the Council has continued to assess the potential effect of development sites on biodiversity within Oxford. As per the Preferred Options stage, the Proposed Submission document maintains the underlying principle that areas with biodiversity interest make a vital contribution to quality of life and should be protected. In some circumstances, it may be that previously developed land has biodiversity interest, and this has also been considered.

SUMMARY OF PRE-OPTIONS AND PREFERRED OPTIONS PROCESS

3. No sites within a SAC or a SSSI were taken forward to the Preferred Options stage and the Council applied an indicative buffer zone of 200m around any SSSI to indicate potential development impact from development within that buffer. The Council conducted a Source Receptor Pathway Analysis for the SSSIs and a Habitats Regulation Assessment (HRA) to provide a more detailed assessment of the potential impact of the development of sites on the SAC.

PROPOSED SUBMISSION STAGE

4. The Proposed Submission Local Plan was informed by further screening of biodiversity sites following the information gathered from the Preferred Options consultation and further advice from Natural England and the County Council Ecologist.
5. All sites proposed for development in the Local Plan Proposed Submission were considered for their potential effect on the SAC through the HRA screening process. Details of the HRA screening process and Appropriate Assessment can be found in the HRA.

- Sites were screened against their effect on SSSIs using a Source Pathway Resource Analysis (SPRA). The Oxford Meadows SAC was excluded from detailed analysis in the SPRA because it has been considered in the HRA.

SOURCE PATHWAY RECEPTOR ANALYSIS (SPRA)

- The SPRA is a method to understand the linkages between potential hazards and risks to a SSSI. For a risk to arise there must be a ‘hazard’ called source (the proposed development sites increasing visitors, causing surface water run off etc.), a ‘receptor’ (SSSIs) and a pathway between the source and the receptor (i.e. air, water, visitors). A hazard does not always lead to a detrimental impact but, if identified, it shows there is a possibility of detrimental impact occurring. The nature of the impact depends on the type of hazard and the characteristics of the SSSIs.

SPRA METHODOLOGY

- In the preparation of the SPRA, the Council developed and followed the methodology below. The approach has been supported by Natural England.

Methodology stages	Description
1. Develop list of SSSIs within Oxford’s boundaries and those in close proximity to the boundary.	Natural England advised list of sites within and outside the city’s boundaries.
2. Understanding of SSSI conservation objectives and current status	Desk study with information from Natural England establishing: <ul style="list-style-type: none"> • what is being protected via each site’s designation; • the current status in terms of their conservation objectives; and • known trends on either improvement or decline.
3. Identify potential pathways by which impacts associated with the Sites and Housing DPD might affect SSSIs	Ecological expertise (Natural England) has been used to focus only on those pathways that are verifiable as important links between land-use and development and the SSSIs.
4. Identify whether potential pathways are likely to have a significant effect on SSSIs	Based on the status of the sites and expert knowledge from planners, Natural England and Environment Agency on how impacts and pathways might affect sites in a worst case scenario.
5. Consultation during preparation of SPRA	Consultation with Natural England, County Ecologist and Environment Agency on approach to SPRA to be

incorporated into the report.

9. The SSSIs assessed were:

Within Oxford City Council boundary	Outside of Oxford City Council boundary
Pixey and Yarnton Meads	Wytham Woods
Wolvercote Meadows	Sidlings Copse and College Pond
Port Meadow with Wolvercote Common and Green	Brasenose Wood and Shotover Hill
Hook Meadows and Trap Grounds	
New Marston Meadows	
Magdalen Grove	
Rock Edge	
Lye Valley	
Littlemore Railway Cutting	
Iffley Meadows	

10. The Council carried out an initial screening of each of the sites in the Preferred Options Document considering;

- Comments from Natural England on the Preferred Options;
- Comments from Environment Agency on the Preferred Options;
- Whether the site was proposed for allocation;
- Whether the site fell within an ‘easy walking distance’ from any SSSI (600 metre buffer);
- Whether the site, although more than 600 metres away, could affect water tables or the quality of water of the rivers Thames and Cherwell

11. An ‘easy walking distance’ is commonly established as 400 metres, while 800 metres is thought to be the distance people are prepared to walk to specific services such as railway stations. The Council chose the 600 metre buffer as a balance between the two. The above parameters were agreed with Natural England during the preparation of the SPRA. A number of the preferred options sites were taken forward as allocations in the emerging Local plan, based on their availability during the plan period and suitability for the preferred uses. Of these, the sites considered to have a potential impact upon a SSSI and therefore worth assessing are:

Site	Proposed development sites
SP17	Former Government Buildings and Harcourt House
SP20	Churchill Hospital Site and Ambulance Resource Centre
SP21	Nuffield Orthopaedic Centre, Windmill Road
SP22	Old Road Campus
SP28	Park Farm, Marston
SP30	Land east of Redbridge Park & Ride
SP31	St Catherine's College
SP32	Banbury Road University Site
SP33	Bertie Place Recreation Ground and Land Behind Wytham Street
SP34	Canalside Land, Jericho
SP35	Court Place Gardens, Iffley Village
SP39	Former Iffley Mead Playing Fields
SP43	Land at Meadow Lane
SP45	Littlemore Park, Armstrong Road
SP46	Manor Place
SP50	Oriel College site at King Edward Street and High Street
SP51	Oxford Brookes Marston Road Campus
SP55	Radcliffe Observatory Quarter, Jericho
SP58	Slade House
SP61	University of Oxford Science Area and Keble Road Triangle
SP64	Wolvercote Paper Mill, Mill Road
SP65	Bayards Hill Primary School Playing Fields
SP66	William Morris Sports Ground

SPRA FINDINGS

12. The SPRA was developed in a table to ensure that the potential cumulative impacts on each SSSI could be comprehensively assessed. This is contained in Appendix 1. This section contains a summary of the findings.

- None of the proposed development sites fall within an SSSI and therefore there will be no physical disturbance to the SSSIs. However, sites SP20 (Churchill Hospital Site, and SP46 (Manor Place) are adjacent to SSSIs and would be expected to include a buffer zone during construction to ensure SSSI land is not disturbed.
- None of the proposed development sites affect **Hook Meadows and Trap Grounds, Wytham Woods or Sidling's Copse and College Pond SSSIs.**

- The Council undertook a Habitats Regulation Assessment (HRA) in relation to the Oxford Meadows SAC. **Pixey and Yarnton Meads, Wolvercote Meadows and Port Meadow with Wolvercote Common and Green SSSIs** all form part of the SAC. Although they are included in the SPRA table, the HRA supersedes the SPRA recommendations. See the Habitats Regulation Assessment for more information.
- **New Marston Meadows SSSI** is sensitive to changes in the flows and quality in the River Cherwell due to being on its flood plain. The SPRA recommended that development proposals for site SP17 (Government Buildings and Harcourt House Site), SP28 (Park Farm, Marston), SP31 (St Catherine’s College), SP32 (Banbury Road University Sites), SP46 (Manor Place), SP51 (Oxford Brookes Marston Road Campus) and SP61 (University of Oxford Science Area and Keble Road Triangle). The design of the proposals should ensure no impact on the River corridor and SSSI.
- **Magdalen Grove SSSI** is a geological site only sensitive to direct land take. No land take will result from any of the proposed development sites and therefore there is no direct impact.
- **Rock Edge SSSI** is a geological site only sensitive to direct land take. No land take will result from any of the proposed development sites and no site is adjacent to the SSSI therefore there is no direct or indirect impact.
- **Lye Valley SSSI** is sensitive to changes in the surface and groundwater of the area including both the flows and the quality of the water. Erosion of the watercourses upstream of the two SSSIs can also have an impact on them. The SPRA indicated that sites SP20 (Churchill Hospital), SP21 (Nuffield Orthopaedic Centre), SP22 (Old Road Campus), SP58 (Slade House), and SP66 (William Morris Sports Ground):
 - involve the redevelopment or partial redevelopment of existing sites and provide the opportunity to reduce water run-off in the area;
 - need assessment of groundwater and surface water.
- Site SP20 (Churchill Hospital) is adjacent to **Lye Valley SSSI** and development proposals should ensure there is no disturbance of SSSI land during construction phase.
- **Littlemore Railway Cutting SSSI** is a geological site only sensitive to direct land take. No land take will result from any of the proposed development sites.
- **Iffley Meadows SSSI** is sensitive to changes in the flows and quality of water in the two arms of the river Thames due to being in its floodplain. The SPRA recommended

that sites SP30 (Land east of Redbridge), SP33 (Bertie Place Recreation Ground and Land behind Wytham Street), SP35 (Court Place Gardens), SP39 (Former Iffley Mead Playing Field) and SP43 (Land at Meadow Lane):

- provide Sustainable Urban Drainage Systems;
- may need to be accompanied by a ground water study depending on the final development proposals for the sites

POLICY ACTIONS

13. Each of the mitigation measures referred to above has been included within policy wording of the relevant site within the Proposed Submission Document.

LOCAL SITES OF NATURE CONSERVATION INTEREST

14. As well as nationally and internationally designated sites of biodiversity interest, which in Oxford include the SAC and SSSIs, some other sites are worthy of protection for their local nature conservation interest. Local Wildlife Sites (LWS) are designated at county level. The list is managed by Thames Valley Environmental Record Centre.
15. In Oxford, locally protected sites were previously called Sites of Local Importance for Nature Conservation (SLINC). These were identified many years ago, and some of these are now designated as LWS. Therefore, a thorough review of SLINCs that had not been designated as LWS was required.
16. The City Council worked with Thames Valley Environmental Record Centre to identify information that existed about previous SLINCs, and any gaps in information. A significant number of sites were surveyed. Selection criteria were developed for Oxford City Wildlife Sites. This is attached at Appendix 2. The Oxford City Wildlife Site Review 2017 is published as a separate document.
17. Following the Preferred Options stage, any greenfield sites proposed were reviewed by the ecologist to consider whether there was potential for biodiversity interest that should be protected on-site. An initial survey was carried out in autumn of 2017 on any greenfield site with potential biodiversity interest. Although this was a sub-optimal time of year for surveys, the very warm autumn meant that surveys were still adequate to identify any potential interest. Sites with potential interest were surveyed again in summer 2018. Both the Phase 1 Botanical Survey Target Notes and the additional surveys are published as separate documents.

APPENDIX 1: SOURCE PATHWAY RECEPTOR ANALYSIS OF SSSI'S AND PROPOSED DEVELOPMENT SITES

SSSI*	Condition	Designation features	Proposed Sites	Distance from SSSI	Preferred Option use	Direct Impact	Indirect Impact : Broad Impact Pathway			Potential cumulative Impact	Mitigation or recommendation
						Physical disturbance	Air	Water	Other pathways		
Pixey and Yarnton Meads	100% favourable	MG4 Alopecurus pratensis - Sanguisorba officinalis grassland	SP 64 - Wolvercote Paper Mill	Within 200 metres.	Residential incl. poss. employment and community facilities.	None.	Volume traffic relates mainly to proximity to A34. However, some employment uses on SP 64 could have an impact on the SSSI. Potential effect from volume traffic dust during construction.	Surface water run-off. Water contamination. Alteration of water tables.	Potential greater number of visitors increasing recreational pressure.	Part of Oxford Meadows SAC. Sensitive to air quality and changes in hydrology. Within walking distance to a proposed housing site (some 200 new homes) would increase visitor pressure but this is not a site sensitive to this.	Development proposals should be accompanied by: Assessment of ground water and surface water flows. If employment proposed as part of Site SP64, an assessment of the employment use on air quality to demonstrate no impact on SSSI. All proposals should minimise impact on air quality during construction phase. The Council is undertaking a Habitats Regulations Assessment in relation to this SAC and will screen a large number of sites including those listed in here. If the HRA evidence shows that the Wolvercote Paper Mill proposal were to increase visitor level to a degree which will have a negative impact on the SCA and no mitigation were suitable, the site should not proceed to allocation.
Wolvercote Meadows	100% favourable	MG4 Alopecurus pratensis - Sanguisorba officinalis grassland	SP 64 - Wolvercote Paper Mill	Within 200 metres.	Residential incl. poss. employment and community facilities.	None.	Volume traffic relates mainly to proximity to A34. However, some employment uses on SP64 could have an impact on the SSSI. Potential effect from volume traffic dust during construction.	Surface water run-off. Water contamination. Alteration of water tables.	Potential greater number of visitors increasing recreational pressure.	Part of Oxford Meadows SAC. Sensitive to air quality and changes in hydrology. Within walking distance to a proposed housing site (some 200 new homes) would increase visitor pressure but this is not a site sensitive to this.	Development proposals should be accompanied by: Assessment of ground water and surface water flows. If employment proposed as part of Site SP64, an assessment of the employment use on air quality to demonstrate no impact on SSSI. All proposals should minimise impact on air quality during construction phase. The Council is undertaking a Habitats Regulations Assessment in relation to this SAC and will screen a large number of sites including those listed in here. If the HRA evidence shows that the Wolvercote Paper Mill proposal were to increase visitor level to a degree which

												will have a negative impact on the SCA and no mitigation were suitable, the site should not proceed to allocation.
Port Meadow with Wolvercote Common and Green	98.72% favourable	1.28% unfavourable recovering	Population of schedule 8 plan - Apium repens, Creeping Marshwort; MG11 - Festuca rubra - Agrostis stolonifera - potentilla anserina grassland; MG13 Agrostis stolonifera - Alopecurus geniculatus grassland; MG6 - Lolium perenne - Cynosurus cristatus grassland	SP64 - Wolvercote Paper Mill	Within 200 metres.	Residential incl. poss. employment and community facilities.	None	Air quality impacts relate mainly to the proximity to the railway line. However, some employment uses on site 193 could have an impact on the SSSI. Potential effect from volume traffic and dust during construction of all sites.	Surface water run-off. Water contamination. Alteration of water tables.	Potential greater number of visitors from sites SP34, SP55 and SP64 increasing recreational pressure.	Part of Oxford Meadows SAC. Sensitive to air quality and changes in hydrology Within walking distance to proposed housing sites (some 280 new dwellings) would increase visitor numbers and could increase recreational pressure on the SAC.	Development proposals should be accompanied by: Assessment of recreational pressure; Assessment of ground water and surface water flows.
				SP34 - Canalside Land	Within 600 of SSSI/SAC.	Mix to include residential, community centre and boatyard.						If employment proposed as part of SP64, an assessment of the employment use on air quality.
				SP55 - Radcliffe Observatory Quarter	Within 600 of SSSI/SAC.	Mixture of employment, academic, key worker housing and student accommodation.						All proposals should minimise impact on air quality during construction phase. The boatyard on site SP34 may need some sealed areas if fuels, paints and chemicals are being used. There is potential mitigation for SP64 by providing open recreational space to the rear of the proposal. However, whether this mitigation is effective would depend on its detailed design and the results of a visitor survey linked to the Habitats Regulation Assessment. The Council is undertaking a Habitats Regulations Assessment in relation to this SAC and will screen a large number of sites including those listed in here. If the HRA evidence shows that the Wolvercote Paper Mill proposal were to increase visitor level to a degree which will have a negative impact on the SCA and no mitigation were suitable, the site should not proceed to allocation.
Hook Meadows and Trap Grounds	68.34% unfavourable recovering	31.66% unfavourable no change	MG23 - Juncus effusus/acutiflorus - Galium palustre rush pasture; MG5 - Cynosurus cristatus - Centaurea nigra grassland; MG8 - Cynosurus cristatus - Caltha palustris grassland	No site within 600m of SSSI.			None.	SSSI sensitive to changes in hydrology and air quality (being so close to the railway line). However, no proposed sites for allocation affect this SSSI.	None.			

New Marston Meadows	100% favourable	MG13 - Agrostis stolonifera - Alopecurus geniculatus grassland; MG4 - Alopecurus pratensis - Sanguisorba officinalis grassland; S28 - Phalaris arundinacea tall herb fen; S5 - Glyceria maxma swamp; S6 - Carex riparia swamp; S7 - Carex acutifrrmis swamp	SP61 -Keble Road Triangle and Science Area (inc. DS9)	Within 600m of a SSSI.	Mixed use comprising Academic, research, student accommodation.	None.	Potential effect from volume traffic and dust during construction of all sites.	Surface water run-off . Water contamination.	None.	SSSI sensitive to changes in the flows and quality of water in the river Cherwell due to being in its floodplain. There have been previous issues on this site with sewage leakages; therefore the network capacity needs to be considered.	Development proposals should be accompanied by an assessment of sewage network capacity and their design should ensure no impact on the river corridor and SSSI.
			SP32 - Banbury Road University sites	Within 600m of a SSSI.	Mixed use comprising Academic, research, student accommodation.						
			SP17 -Former Government Buildings and Harcourt House	Within 600m of a SSSI.	Mix incl. student accommodation/residential and academic institutional.						
			SP51 - Oxford Brookes Marston Road Campus	Within 600m of a SSSI.	Mixed use comprising Academic, research, student accommodation.						
			SP28 - Park Farm, Marston	Within 200m of SSSI.	Residential.						
			SP31 - St Catherine's College	Within 200m of SSSI.	Student accommodation.						
			SP46 - Land off Manor Place	Within 200m of SSSI	Student accommodation.						
Magdalen Grove	100% favourable	FB - Quarternary of the Thames	SP61 - Keble Road Triangle and Science Area (inc. DS9)	Within 600m of a SSSI.	Mixed use comprising Academic, research, student accommodation.	None.	None.	None.	None.	SSSI is a geological site only sensitive to direct land take. No land take involved in either of the proposals therefore there is no direct impact.	None.
			SP50 - Oriol College land at King Edward St and High St	Within 600m of a SSSI.	Academic use, student accommodation.						
			SP50 - King Edward Street and High Street	Within 600m of a SSSI.	Retail with teaching/offices/student/residential on upper floors.						
Rock Edge	100% favourable	ED - Oxfordian	SP21 - Nuffield Orthopaedic Centre	Within 200m of SSSI.	Hospital and medical research.	None.	None.	None.	None.	Geological site only sensitive to direct land take. No land take involved in neither of the proposals.	None.
			SP22 - Old Road Campus	Within 600m of a SSSI.							

			SP20 - Churchill Hospital and Ambulance Resource Centre	Within 600m of a SSSI.								
Lye Valley	100% unfavourable recovering		Invertebrate Assemblage; M13 - Schoenus nigricans - Juncus subnodulosus mire; M22 - Juncus subnodulosus - Cirsium palustre fen meadow	SP20 - Churchill Hospital and Ambulance Resource Centre	Adjacent to SSSI.	Mainly hospital related with mix incl. poss. residential and student accommodation.	Site SP20 is adjacent to SSSI and could be disturbance of land during construction phase.	None.	Surface water run-off. Water contamination. Alteration of water tables.	None.	Sensitive to changes in the surface and groundwater of the area, including both the flows and quality of the water. Erosion of the watercourses upstream of the two SSSI sites can also have an impact on them. No land take involved in neither of the proposals therefore there is no direct impact. However, a mechanism should be put in place to ensure that SSSI land is not disturbed during construction phase of adjacent sites (Site SP20)	All sites involve the redevelopment or partial redevelopment of existing sites and provide the opportunity to reduce water run-off in the area. Assessment of groundwater and surface water impacts needed at design stage for all sites. Buffer zone during construction phase at site SP20 to ensure SSSI land is not disturbed.
				SP22 - Old Road Campus	Within 600m of a SSSI.	Hospital and medical research.						
				SP21 - Nuffield Orthopaedic Centre	Within 200m of SSSI.							
				SP66 - William Morris Sports Ground	Within 600 metres.	Residential.						
				SP58 - Slade House	Within 200 metres.	Residential.						
Littlemore Railway Cutting	100% unfavourable declining		ER - Oxfordian	SP45 - Littlemore Park	Within 600m of a SSSI.	Employment (B1).	None.	None.	None.	None.	Geological site only sensitive to direct land take. No land takes involved in the proposals.	None
Iffley Meadows	53.80% favourable	46.20% unfavourable recovering	Nationally scarce plant - Fritillaria meleagris, Fritillary; MG10 - Holcus Lanatus - Juncus effusus; MG4 - Alopecurus pratensis - Sanguisorba officinalis grassland; MG9 - Holcus lanatus - Deschampia Caespitosa	SP35 - Courtplace Gardens	Within 200m of SSSI.	Residential or student accommodation.	None.	None.	Surface water run-off. Water contamination.	None.	This site is sensitive to changes in the flows and quality of water in the two arms of the river Thames due to being in its floodplain.	Sustainable Urban Drainage required for all sites. Potential requirement of ground water assessment depending on the final proposals for the sites.
				SP33 - Bertie Place Recreation Ground	Within 600m of a SSSI.	School or residential.						
				SP30 - Green Belt Land east of Redbridge Park & Ride	Within 200m of SSSI.	Residential.						
				SP39 - Former Iffley Mead Playing Field	Within 600 metres.	Residential.						

				SP43 – Land at Meadow Lane	Within 600 metres.	Residential							
Wytham Woods	100% unfavourable recovering		Populations of nationally scarce butterfly species - <i>Strymonidia pruni</i> , Black Hairstreak; Vascular plant assemblage; CG3 - <i>Bromus erectus</i> lowland calcareous grassland; CG5 - <i>Bromus erectus</i> - <i>Brachypodium pinnatum</i> lowland calcareous grassland; W10 - <i>Quercus robur</i> - <i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> woodland; W8 - <i>Fraxinus excelsior</i> - <i>Acer campestre</i> - <i>Mercurialis perennis</i> woodland	No site within 600m of SSSI.			None.				Air quality may be an issue being so close to the A34. No sites proposed for allocation affect this site.	None.	
Sidlings Copse and College Pond	33.20% favourable	66.80% unfavourable recovering	Nationally scarce plant - <i>Epipactis phyllanthes</i> , Green flowered Helleborine; Population of schedule 8 plant - <i>Himantoglossum hircinum</i> , Lizard Orchid; CG3 - <i>Bromus erectus</i> lowland calcareous grassland; M13 - <i>Schoenus nigricans</i> - <i>Juncus subnodulosus</i> mire; S26 - <i>Phragmites australis</i> - <i>Urtica dioica</i> tall-hern fen; U1e - <i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Rumex acetosella</i> lowland acid grassland; W10 - <i>Quercus robur</i> - <i>Pteridium aquilinum</i> - <i>Rubus fruticosus</i> woodland	No site within 600m of SSSI.						Potential greater number of visitors increasing recreational pressure.	This site is sensitive to recreational pressure from Oxford City, with footpaths from the district linking up to the site. There are already cases of vandalism on site, and further development will increase both recreational pressure and other damaging activities. There are no proposed development sites within walking distance to the SSSI.	Although the sites proposed in the Sites and Housing DPD are unlikely to have a detrimental effect on the SSSI, other Council proposals could. The Barton Area Action Plan will contain a policy requiring the submission and implementation of a plan for mitigating any potential adverse impact as a result of increased recreational pressures from development.	
Brasenose Wood and Shotover Hill	42.67% favourable	57.33% unfavourable recovering	Invertebrate Assemblage; Populations of nationally scarce butterflies - <i>Strymonidia pruni</i> , Black Hairstreak; H1 - <i>Calluna vulgaris</i> - <i>Festuca ovina</i> heath; U1 b, c, d, f - <i>Festuca ovina</i> - <i>Agrostis capillaris</i> - <i>Rumex Acetosella</i> grassland;	SP58 - Slade House	Within 200m of SSSI.	Residential, employer linked housing, improved healthcare facilities.	None.	None.	None.	Potential greater number of visitors increasing recreational pressure.	Sensitive to recreational pressure. Within walking distance from proposed residential usage (some 84 new dwellings), which would potentially	Development proposals should be accompanied by: Assessment of recreational pressure from site SP58 once proposals are known. Alternatively, and subject to agreement with Natural England, the proposals could	

		<p>W10 - Quercus robur - Pteridium aquilinum - Rubus fruticosus woodland; W16 - Quercus spp. - Betula spp. - Deschampia flexuosa woodland; W8 - Fraxinus excelsior - Acer campestre - Mercurialis perennis woodland</p>												<p>increase pressure on this site.</p>			<p>submit and implement a plan for mitigating any potential adverse impact as a result of increased recreational pressures from development.</p>
--	--	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

* All proposals for sites which would have a potential effect on a SSSI should tailor their mitigation measures around the specific conservation objectives for that SSSI.

APPENDIX 2: SELECTION CRITERIA FOR OXFORD CITY WILDLIFE SITES

Introduction

In Oxford City, Sites of Local Importance for Nature Conservation (SLINC) were identified to highlight the most important wildlife sites that lacked other designations. Sites currently listed as SLINCs have been included based on knowledge of local experts and information from local groups. Some sites originally included as SLINCs (following surveys in 2008-10 and consideration by the LWS selection panel) have now been accepted as LWS. The information used for selection of SLINCs is now, in many cases, out of date and the value of some sites may have changed. The inclusion of sites thought to be of City importance has so far been based on local expertise and knowledge but there is currently a lack of written guidelines detailing the criteria used for selecting such sites. Re-assessment based on clearly defined criteria is desirable to ensure the sites included accurately represent the key wildlife sites in Oxford City that are not otherwise designated. This report provides recommendations for criteria which could be used for selection of wildlife sites of value at the City level.

What are Oxford City Wildlife Sites?

Oxford City Wildlife Sites are sites that have significant value for wildlife for the City. These sites are one tier below Local Wildlife Sites (LWS) in status, i.e. their interest is not considered sufficient to be of county importance and to warrant statutory protections but are worthy of recognition at the City level. In many cases, with appropriate management Oxford City Wildlife Sites may attain LWS quality in the future.

Sites currently included as SLINCs include:

- Denotified Local Wildlife Sites retaining some nature conservation interest due to the presence of NERC S41 Habitat and Species of principle importance (priority habitat and species) (but fail to meet the standard required for selection as LWS).
- Sites that have been surveyed for Local Wildlife Site status that were rejected but have nature conservation interest that can be considered valuable at the City level due to the presence of priority habitats and species.
- Nature reserves which have no other status.
- Other sites that have been previously surveyed which have nature conservation interest of that can be considered valuable at the City level due to the presence of NERC S41 Habitat and Species of principle importance (priority habitat and species).
- Potentially valuable wildlife corridors including railway cuttings and watercourses (including streams and canals).
- Lakes with bird interest
- Other community sites with significant management for nature conservation.

Selection Criteria

The following criteria are based on the 'Ratcliffe approach' which was drawn up in 1977 as a guide for the selection of biological SSSIs published by the Nature Conservancy Council (since succeeded as Natural England). This approach is widely accepted and used for the wildlife site selection at different levels of geographic importance including LWS in Oxfordshire. The criteria developed by Ratcliffe have been modified to ensure that sites of local (not just national) importance will be selected.

Within Oxfordshire, LWS are identified through criteria based primarily on the presence of good quality examples of NERC S41 Habitat of principle importance (priority habitat) and/or a significant population of rare or otherwise notable species/species assemblage for the County.

The full selection criteria and further details on the survey and designation process are available on the TVERC website - <http://www.tverc.org/cms/content/local-wildlife-sites> (BMERC and TVERC 2017).

Wildlife value criteria

1.A Naturalness

Priority habitat

This criterion identifies sites that include habitat similar to original natural habitats (i.e. similar to NERC S41 habitats) and have features associated with habitat continuity. Sites meeting this criterion will include a range of the species typically associated with the relevant NVC communities (for the priority habitat concerned) and have features associated with habitat continuity (such as species that are sensitive to disturbance or poor management). A list of the priority habitats recorded in Oxford City is included in Table 1. Sites with remnant elements of priority habitat or more transitional communities can also be considered for inclusion, especially where there is current management for nature conservation and good prospects for improvement of the habitat condition in the future. Examples would include lowland meadow or lowland calcareous grassland that is transitional to rougher grassland communities due to lack of or inconsistent management. The quality of the habitat should be taken into account and, for some habitat types, not all sites with priority habitat would be selected. Poorer examples of some habitats will be deemed to fail to meet this criterion in cases where their low diversity means that they are not of City significance. For example, this may include areas of habitat such as floodplain grazing marsh (that is improved grassland and lacks significant bird interest), lowland mixed deciduous woodland (that lacks diversity and species indicating habitat longevity), lowland wood pasture and parkland (that lacks significant veteran tree interest) and species-poor hedgerows.

TVERC & BMERC (2017) provides guidance on the plant community types typically found in Oxfordshire that relate to priority habitat and lists of the typical species. This includes reference to the relevant NVC plant communities (Rodwell (1991-5)).

Ancient and Veteran trees

Whilst not included as a Priority habitat (NERC S41 habitat) in their own right, veteran trees form important wildlife habitat. Veteran trees are often found within priority habitat such as lowland mixed deciduous woodland, wood pasture and parkland or traditional orchard but can occur in other habitats. Veteran trees found outside priority habitat can be considered in their own right under this criterion.

Hedgerows

All hedgerows composed of 80% or more native species form Priority habitat (NERC S41). Only those that are particularly species-rich examples and/or form important green corridors will meet this criterion. Hedgerows that support rare species should be considered under criterion 1B.

1.B Rarity

This criterion identifies sites that include:

- a habitat considered rare in Oxford City; or
- a population or assemblage of species deemed of significance at the City level.

Rare species

Species considered should include:

- NERC Act (S41) Species of Principal Importance
- The Wildlife and Countryside Act 1981 (Schedule 1 and 8)
- Nationally rare or scarce species
- National red list species
- Oxfordshire Rare Plants Register Species and other species identified as rare at the county level
- Other uncommon species identified as having particular significance for the City

Some context can be found in the species sections of TVERC and BMERC 2009/2017 which indicates the level of interest deemed significant for Oxfordshire for many species. Sites that come close to meeting the LWS species criteria (but fall just below the required level of interest) will, in most cases, meet this criterion. Guidance from local experts should be sought (where required) to establish the local significance for particular rare species. Assessing species assemblages or populations will usually require quantitative data from repeat surveys.

There should be evidence that more mobile rare species are resident/breeding on the site or that it has features regularly used by that species (such as important feeding ground or roost) rather than a casual visit on a single occasion.

Rare habitats

The following habitats are considered rare in Oxford City:

- Lowland fens (valley head spring fens rather than floodplain fens)
- Wet woodland
- Traditional Orchard

1.C Size

This criterion recognises sites that include areas of habitat or species populations that are of particular significance for the City due to their size. Sites meeting this criterion will hold a substantial amount of the City resource for a habitat types or notable species population. For blocks of particular habitat, suggested threshold areas are provided in Table 2.

For some habitats, it is more appropriate to assess this criterion in terms of the size of species populations they support rather than acreage. For example, flood plain grazing

marsh and standing water would usually be considered for the size of the bird populations they support.

Where several different habitats are present, the overall size of the site should be considered along with the extent of each individual habitat type.

Assessing the significance of a population of priority (or otherwise notable) species may require the guidance of local experts and advice should be sought where required.

1.D Diversity

Diversity is considered in terms of both habitat and species diversity.

Habitat diversity

Sites with a range of several different habitats and/or high structural diversity will meet this criterion.

Species diversity

Sites with species-rich habitat will meet this criterion. The numbers of species recorded that are typical of the priority habitats present and the range of plants indicative of habitat longevity found on the site can be useful in assessing this criterion (but should be considered with reference to their abundance and the wider diversity of species present). Where significant interest for other species groups has been recorded (e.g. birds or invertebrates), the numbers of species recorded (by taxonomic group) can also be useful indicator of diversity but should be considered in the context of the amount of recorder effort.

Historic records should be considered separately from species recorded in recent years to allow assessment of the current level of diversity.

Where high diversity has been recorded historically for a particular species group, but no recent survey data is available, additional survey may be needed.

1.E Connectivity

To meet this criterion, a site does not have to connect with exactly the same habitat, although similar habitats should be near enough for species to move between them. Sites that are within Conservation Target Areas and those that provide linking habitat between other designated wildlife sites or nature reserves would meet this criteria.

The length, as well as the area, of a site should be taken into account. A long thin site may be small in area but have high importance for wildlife e.g. a river corridor, green lane or species-rich hedgerow which links other sites of semi-natural habitats but is also important in its own right. The distance between similar habitats should lie within 500 metres to provide connectivity across the landscape; this could be increased up to 1 km if connected by hedgerows or other semi-natural linear features.

1.F Fragility

Sites will be eligible for selection if they contain a habitat that is vulnerable to loss, damage and or degradation and could not easily be recreated. Examples of loss or damage would be

sites where the habitat is vulnerable to degradation to poor condition through lack or inappropriate management and sites with habitat dependant on low nutrient condition that are being enriched by agricultural spray drift/runoff or dog fouling.

Some habitats are more easily re-creatable than others. Table 3 is an extract from BMERC & TVERC 2017 that provides information on which habitats should be considered fragile.

Species interest can also meet this be fragile. Populations that are vulnerable to pollution, inappropriate management and/or disturbance will meet this criterion if they would be unlikely to recolonise/difficult to reintroduce.

2.A Naturalness (Access to nature & education value criteria)

This criterion identifies sites with semi-natural habitat that fails to meet criteria 1A but includes features that are of significant value for public engagement with nature. Sites considered here will include semi-natural habitat and be managed for wildlife conservation aims.

In order to meet this criterion, sites will have value under one or more of the Wildlife criteria (1C, 1D and 1E).

Sites meeting this criterion are likely to include community woodlands and other community sites managed for nature conservation which have no other status.

2.B Value for appreciation of nature

Sites will be eligible for selection under this criterion if they are freely accessible to the public, offer engagement opportunities/events, are easily visible from a public right of way (with opportunities to see and engage with the wildlife features of interest found on the site) and/or add significantly to the natural aesthetics of the local area.

This criterion differs from the following 'value for learning' criterion (2.C) because people may appreciate the site for its natural feel or aesthetic value, rather than gaining knowledge about the environment.

2.C Value for learning

Sites will meet this criterion where there is current, regular use by local groups or educational establishments to educate people about nature. Examples of events meeting this criterion include Forest School site visits, fungus forays or guided walks by local groups or nature organisations that include passing on knowledge about the natural world.

2.D Recorded history and cultural associations

Sites will meet this criterion where there are records of long-term biological recording or known historical/cultural significance. Sites with regular recording and longstanding records collected from the site over at least ten years will meet this criterion. For example, this may include records produced by local and national recording schemes and societies (e.g. Butterfly Conservation transects, British Trust for Ornithology, BSBI quadrats). In some cases, they may be the location where important discoveries were made. These discoveries

can add to the conservation value of a site. They can also provide an insight into historic land use and management of the site, including habitat change.

Sites with current cultural associations such as a site with an active ‘friends of’ or conservation group will qualify under this criterion. Inclusion of the site on the ancient woodland inventory will also qualify the site under this criterion.

Criteria structure

Sites should be selected where they meet:–

- Criteria 1. A and at least one of the following - Criteria 1 C, D, E, F; Criteria 2 B, C, D, or E; or
- Criteria 1. B; or
- Criteria 2. A and at least one of the other Criteria 2 features (B, C, or D)

1	Wildlife value criteria	Criteria met (Y/N)
A	Naturalness (S41 Priority habitat or remnant; Other natural feature of significant importance for the City)	
B	Rarity (species, habitat or other wildlife feature)	
C	Size (extent of habitat or species population size)	
D	Diversity (Of species and/or habitat types)	
E	Connectivity (in semi-natural habitat between wildlife site and/or identified as important species corridors)	
F	Fragility	

2	Access to nature & education value criteria	Criteria met (Y/N)
A	Semi-natural habitat (including non-priority habitat) and managed for wildlife conservation objectives. To meet this criteria sites will also have value under one or more of the Wildlife criteria (1C, 1D and 1E)	
B	Public access and significant opportunities for engagement with nature	
C	Significant value for learning	
D	Strong cultural associations/historic significance	

Boundaries

Usually whole management units should be included in the site boundary (e.g. whole fields or woodland blocks) that are defined both on the ground and on maps. It may be acceptable to include smaller areas in some circumstances but the location and extent of the site should be clearly defined on mapping and easily discernible in the field. Site would usually be at least 0.1 ha.

Exclusions

Residential gardens and buildings will not be included.

Table 1: Priority habitats (NERC Act S41 Habitats of Principle Importance) recorded in Oxford City

Coastal and Floodplain Grazing Marsh
Eutrophic standing water
Hedgerows
Lowland calcareous grassland
Lowland fens
Lowland meadow
Lowland mixed deciduous woodland
Lowland wood pasture and parkland
Ponds
Reedbeds
Rivers
Traditional Orchards
Wet woodland
Urban greenspace

Table 2: Suggested Size Thresholds (primarily based on TVERC habitat mapping 2016)

Habitat	Suggested Threshold	Comment
Coastal and Floodplain Grazing Marsh	n/a	Bird population size supported by the site is likely to be more important for assessing this habitat
Lowland calcareous grassland	n/a	None mapped but known to be present in the City (i.e. Lye Valley and Cowley Marsh LWS)
Lowland meadow	6.7ha	3% of city resource
Lowland fen	0.4ha	3% of city resource
Reedbed	0.1ha	5% of city resource
Lowland mixed deciduous woodland	0.7ha	5% of city resource
Lowland wood pasture and parkland	n/a	Only one area mapped
Eutrophic standing water	n/a	Bird population size supported by the site is likely to be more important for assessing this habitat
Wet woodland	0.3ha	5% of City resource
Traditional orchards	0.35ha	5% of City resource
Open Mosaic habitat on Previously Developed Land	0.25ha	None currently mapped on TVERC habitats layer but ADAS/DEFRA 2010 guidelines suggest sites should be at least 0.25ha for this habitat

Table 3: Habitat fragility (extract from TVERC & BMERC 2017¹)

Habitat	How easy is habitat to create?	Fragile?
Grassland (neutral and calcareous)	Neutral and calcareous grasslands are difficult to create. Disturbed soils (e.g. ploughed) take a long time to rebuild structure. Fertile soils can also take a long time to become nutrient poor through management. Newly created grasslands are often species poor for long periods. Many recreated grasslands never recover species found in undisturbed grasslands.	YES
Grassland (acid)	Acid grassland is possibly more robust and easier to recreate. Some invertebrate species might not colonise new acid grassland immediately.	NO
Lowland heathland	Heathland can be difficult to create, but degraded habitat can be restored by scrub removal. Heathland creation on former forestry sites is very successful, but recreated sites are not as diverse as old heathland. Some typical heathland species (e.g. birds and adders) are susceptible to disturbance.	YES
Standing waters (Eutrophic)	Eutrophic standing waters are easy to create, and tend to be better early on, declining after that without suitable management. Disturbance can impact on the site's interest for birds.	NO
Standing waters (other)	Other types of standing water are harder to create as they depend on specific water chemistry and quality. Species assemblages are vulnerable to pollution and invasive species.	YES
Ponds	Ponds are susceptible to damage but easy to re-create. They are easily damaged by pollution.	NO
Lowland fens (spring fed and valley mires)	Lowland fens are hard to create as they depend on the right hydrological and geological conditions being present. Peat deposits also take long periods to accumulate.	YES
Lowland fens (single species dominant)	Single-species dominant fens are easier to recreate, but susceptible to invasive species and hydrological change	NO
Floodplain grazing marsh	This habitat can be easily recreated. The species interest may be fragile. Ground-nesting and wintering birds are susceptible to disturbance. Summer flooding and fertiliser application are potential threats to floodplain meadows.	NO
Reedbeds	Reedbeds are easily created. Disturbance can be a problem on smaller sites. Species interest (e.g. birds) can be fragile as they are vulnerable to disturbance.	NO

¹ Berkshire, Buckinghamshire and Oxfordshire LWS selection criteria (draft)

Rivers	Rivers in general are very hard to create as their presence relies on the right geological, geomorphological and hydrological conditions to be present. Chalk streams are particularly hard to create as achieving the right water quality is very hard.	YES
Woodland	Woodland is difficult to recreate as it takes a long time to develop the structure and function of priority habitat. The niches relied on by habitat specialists (e.g. saproxylic species) also require long time periods to create. It is impossible to recreate ancient woodlands over human timescales once they are lost. It is relatively easy to restore woodland.	YES
Wood-pasture and parkland	Habitat quality relies on veteran trees, which are very hard to create (cf ancient woodland). The non-tree component can be relatively easy to create.	YES
Traditional orchards	Orchard habitat quality relies on old or veteran trees which are very hard to create (see wood-pasture). Species such as noble chafer rely on old trees and therefore are fragile.	YES
Open mosaic habitats on previously developed land	This habitat is ephemeral and easy to recreate, but dependent on specific features of the site, such as soil/ground disturbance.	NO