



www.landuse.co.uk

Habitats Regulations Assessment for South Oxfordshire District Council

Prepared by LUC
January 2015

Project Title: Habitats Regulations Assessment for South Oxfordshire District Council

Client: South Oxfordshire District Council

Version	Date	Version Details	Prepared by	Checked by	Approved by Principal
1_0	15/12/2014	Report for client review	Kate Nicholls	Jonathan Pearson	Jeremy Owen
2_0	13/01/2015	Final Report	Kate Nicholls	Jonathan Pearson	Jeremy Owen



www.landuse.co.uk

Habitats Regulations Assessment for South Oxfordshire District Council

Prepared by LUC
January 2015

Planning & EIA
Design
Landscape Planning
Landscape Management
Ecology
Mapping & Visualisation

LUC LONDON
43 Chalton Street
London NW1 1JD
T 020 7383 5784
F 020 7383 4798
london@landuse.co.uk

Offices also in:
Bristol
Glasgow
Edinburgh



FS 566056
EMS 566057

Land Use Consultants Ltd
Registered in England
Registered number: 2549296
Registered Office:
43 Chalton Street
London NW1 1JD
LUC uses 100% recycled paper

Contents

1	Introduction	1
	Background to the preparation of the Local Plan 2031	1
	The requirement for Habitats Regulations Assessment	1
	Previous HRA work undertaken	3
	Scope of this HRA work	4
	Structure of this report	5
2	Approach to the HRA	6
	Updating the evidence base	6
	HRA screening methodology	9
3	HRA of spatial distribution strategy	14
	Screening conclusions	14
	Cumulative effects	15
	In-combination effects	16
4	HRA of alternative growth scenarios	17
	Appropriate Assessment	20
5	Conclusions	22
	Recommendations	22
	Next steps	23
Appendix 1		24
	European sites in and around South Oxfordshire	24
Appendix 2		49
	Screening matrix for the spatial distribution strategy	49

1 Introduction

- 1.1 LUC was commissioned in November 2014 to undertake Habitats Regulations Assessment (HRA) work on behalf of South Oxfordshire District Council. There are two key components of the work that has been undertaken and presented in this report:
- **Updating the HRA of the Core Strategy by undertaking HRA of the distribution of housing between the larger villages:** The adopted South Oxfordshire Core Strategy provided for a total of 1,154 new homes in the district's larger villages but did not specify housing figures for each of those villages individually. The housing figures for each of the villages which have now been identified had not previously been subject to HRA.
 - **Undertaking HRA of four alternative growth scenarios for the new Local Plan:** The Council has identified four alternative options for the total amount of housing growth to be provided for in the new Local Plan for South Oxfordshire, and these have been subject to HRA.

Background to the preparation of the Local Plan 2031

- 1.2 South Oxfordshire District Council adopted its Core Strategy in December 2012. The Core Strategy set out the Council's approach to development in the district up to 2027 and provided for the development of 5,214 new homes and 14.7 ha of employment land over the Plan period¹. At the time that the Core Strategy was adopted the Council was intending to produce a number of other Development Plan Documents (DPDs), which together with the Core Strategy would comprise the Local Plan for the district.
- 1.3 In April 2014 a Strategic Housing Market Assessment (SHMA) for Oxfordshire was published, setting out levels of housing need across the county up to 2031. The SHMA showed that up to 5,900 more homes would be required in South Oxfordshire than were provided for in the adopted Core Strategy. The Council has therefore decided to review the existing plan and extend it to cover the period up to 2031. Work on a Sites and General Policies DPD had commenced but was halted once the decision was made to review the Core Strategy. The intended content of that DPD will instead be incorporated into the new Local Plan, which is to be known as the 'Local Plan 2031'.
- 1.4 The Council intends to roll forward the strategic allocations and many of the policies from the adopted Core Strategy into the Local Plan 2031. The main areas of change will involve addressing how to distribute the additional housing required and planning for the associated infrastructure.
- 1.5 In June 2014 the Council consulted on an Issues and Scope document for the Local Plan 2031. This explained the background to the preparation of the Local Plan 2031 and presented a number of broad options for the distribution of the additional housing required in South Oxfordshire. Consultation questions were also put forward relating to issues such as transport infrastructure and Traveller sites.

The requirement for Habitats Regulations Assessment

- 1.6 The requirement to undertake HRA of development plans was confirmed by the amendments to the "Habitats Regulations" published for England and Wales in July 2007 and updated in 2010² and again in 2012³. HRA refers to the assessment of the potential effects of a development plan

¹ In addition to committed developments as at March 2012.

² The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007. HMSO Statutory Instrument 2007 No. 1843. From 1 April 2010, these were consolidated and replaced by the Conservation of Habitats and Species Regulations 2010 (SI No. 2010/490).

³ The Conservation of Habitats and Species (Amendment) Regulations 2012. Statutory Instrument 2012 No. 1927.

on one or more European sites, including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs):

- **SPAs** are classified under the European Council Directive 'on the conservation of wild birds' (79/409/EEC; 'Birds Directive') for the protection of **wild birds and their habitats** (including particularly rare and vulnerable species listed in Annex 1 of the Birds Directive, and migratory species).
- **SACs** are designated under the Habitats Directive and target **particular habitats** (Annex 1) and/or species (Annex II) identified as being of European importance.

1.7 Potential SPAs (pSPAs)⁴, candidate SACs (cSACs)⁵, Sites of Community Importance (SCIs)⁶ and Ramsar sites should also be included in the assessment.

- **Ramsar sites** support internationally **important wetland habitats** and are listed under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971).

1.8 For ease of reference during HRA, these designations are collectively referred to as **European sites**, despite Ramsar designations being at the international level.

1.9 The HRA of development plans is undertaken in stages (as described below) and should conclude whether or not a proposal would adversely affect the integrity of the European site in question.

Stages in Habitats Regulations Assessment

1.10 **Table 1.1** summarises the stages involved in carrying out a full HRA, based on various guidance documents^{7,8,9}.

Table 1.1 Stages in HRA

Stage	Task	Outcome
Stage 1: Screening (the 'Significance Test')	<p>Description of the plan.</p> <p>Identification of potential effects on European Sites.</p> <p>Assessing the effects on European Sites (taking into account potential mitigation provided by other policies in the plan).</p>	<p>Where effects are unlikely, prepare a 'finding of no significant effect report'.</p> <p>Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.</p>
Stage 2: Appropriate Assessment (the 'Integrity Test')	<p>Gather information (plan and European Sites).</p> <p>Impact prediction.</p> <p>Evaluation of impacts in view of conservation objectives.</p> <p>Where impacts considered to affect qualifying features, identify alternative options.</p> <p>Assess alternative options.</p> <p>If no alternatives exist, define and evaluate mitigation measures where necessary.</p>	<p>Appropriate Assessment report describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the mechanisms and timescale for these mitigation measures.</p> <p>If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.</p>

⁴ Potential SPAs are sites that have been approved by Government and are currently in the process of being classified as SPAs.

⁵ Candidate SACs are sites that have been submitted to the European Commission, but not yet formally adopted.

⁶ SCIs are sites that have been adopted by the European Commission but not yet formally designated as SACs by the Government.

⁷ *Assessment of plans and projects significantly affecting European Sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission Environment DG, November 2001.

⁸ *Planning for the Protection of European Sites. Guidance for Regional Spatial Strategies and Local Development Documents.* Department for Communities and Local Government (DCLG), August 2006.

⁹ *The Appropriate Assessment of Spatial Plans in England. A guide to why, when and how to do it.* RSPB. August 2007.

Stage	Task	Outcome
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	<p>Identify and demonstrate 'imperative reasons of overriding public interest' (IROPI).</p> <p>Demonstrate no alternatives exist.</p> <p>Identify potential compensatory measures.</p>	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

- 1.11 In assessing the effects of development proposals within South Oxfordshire in accordance with Regulation 102 of the Conservation of Habitats and Species Regulations 2010, there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed if necessary by an Appropriate Assessment which will inform the 'Integrity Test'. The relevant sequence of questions is as follows:
- Step 1: Under Reg. 102(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, as is the case for the Local Plan 2031, proceed to Step 2.
 - Step 2: Under Reg. 102(1)(a) consider whether the plan is likely to have a significant effect on the site, either alone or in combination with other plans or projects (the 'Significance Test'). *[These two steps are undertaken as part of Stage 1: Screening shown in Table 1.1 above.]* If so, proceed to Step 3.
 - Step 3: Under Reg. 102(1), make an Appropriate Assessment of the implications for the site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 102(2) to consult Natural England, and optional under Reg. 102(3) to take the opinion of the general public. *[This step is undertaken during Stage 2: Appropriate Assessment shown in Table 1.1 above.]*
 - Step 4: In accordance with Reg.102(4), but subject to Reg.103, give effect to the land use plan only after having ascertained that the plan will not adversely affect the integrity of the European site.
- 1.12 It is normally anticipated that an emphasis on Stages 1 and 2 of the HRA process will, through a series of iterations, help ensure that potential adverse effects are identified and eliminated through the inclusion of mitigation measures designed to avoid, reduce or abate effects. The need to consider alternatives could imply more onerous changes to a plan document. It is generally understood that so called 'imperative reasons of overriding public interest' are likely to be justified only very occasionally and would involve engagement with both the Government and European Commission.
- 1.13 The HRA should be undertaken by the 'competent authority', in this case South Oxfordshire District Council, although consultants may be commissioned to undertake the HRA on its behalf. The HRA also requires close working with Natural England as the statutory nature conservation body¹⁰ in order to obtain the necessary information and agree the process, outcomes and any mitigation proposals. The Environment Agency, while not a statutory consultee for the HRA, is also in a strong position to provide advice and information throughout the process as it is required to undertake HRA for its existing licences and future licensing of activities.

Previous HRA work undertaken

- 1.14 The adopted South Oxfordshire Core Strategy was subject to HRA throughout its preparation and while the HRA of the emerging Local Plan 2031 is being undertaken as a separate exercise, there is a significant body of relatively recent HRA work and supporting evidence which can be drawn from.

¹⁰ Regulation 5 of *The Conservation of Habitats and Species Regulations 2010*. HMSO Statutory Instrument 2010 No. 490.

- 1.15 The HRA for the Core Strategy assessed the potential for impacts on the following six European sites that all fall within 17 km of the four main towns in South Oxfordshire (Didcot, Thame, Wallingford and Henley):
- Aston Rowant SAC.
 - Chiltern Beechwoods SAC.
 - Cothill Fen SAC.
 - Hartslock Wood SAC.
 - Little Wittenham SAC.
 - Oxford Meadows SAC.
- 1.16 Likely significant effects were not able to be ruled out during the screening stage of the HRA; therefore Appropriate Assessment was undertaken in relation to the following potential significant effects:
- Effects on Aston Rowant SAC, Chiltern Beechwoods SAC and Hartslock Wood SAC as a result of **increased air pollution** from vehicle traffic linked to population growth at Henley, Thame and Wallingford.
 - Effects on Cothill Fen SAC in relation to **reduced groundwater levels** as a result of increased water demand from new development and **water quality** issues arising from wastewater discharges.
 - Effects on Little Wittenham SAC in relation to increased **visitor pressure** arising from the expected population growth at Didcot and Wallingford.
 - Effects on Oxford Meadows SAC in relation to **increased traffic volume** on the A34, **direct land take from the SAC** to facilitate improvements to the A34 and **increased demand for water**.
- 1.17 As a result of the work carried out during the Appropriate Assessment stage it was concluded that none of the above European sites would be significantly affected by the proposals in the Core Strategy either alone or in combination with other plans and policies. However, it was noted that the HRA would need to be updated as further policies within the Local Development Framework (LDF) were defined, particularly those associated with the allocation of housing developments within the larger villages. This recommendation is superseded by the requirement for HRA of the Local Plan 2031 which will replace the further LDF documents referred to in the HRA of the Core Strategy. The Local Plan 2031 will include policies for the distribution of the new housing requirement and these will be assessed in full by the HRA for that new Plan.
- 1.18 The Council has already undertaken some initial HRA work in relation to the Local Plan 2031 Issues and Scope document, which was presented in Appendix 3 of the Sustainability Appraisal (SA) Scoping Report (June 2014). For each of the 12 European sites within 17 km of the district boundary, information was provided on the qualifying features, conservation objectives and potential implications for the Local Plan 2031. Consideration was also given to the potential impacts of other plans, such as Local Plans produced by neighbouring authorities. Because the Local Plan 2031 was at such an early stage it was not possible to begin assessing the likelihood of policies and proposals in the Plan having significant effects on the integrity of the European sites. However, the information set out in the document represents important evidence on which future HRA work for the Local Plan 2031 can be based and has been drawn on during the preparation of this report.

Scope of this HRA work

Housing provisions at the larger villages

- 1.19 The Core Strategy provided for a total of 1,154 new homes in the district's larger villages but did not specify housing figures for each of those villages individually. Specific housing provisions for each of the larger villages have now been made but these provisions had not yet been subject to HRA.

- 1.20 The first stage of this HRA work therefore involved subjecting the housing figures for the larger villages to HRA. While the Core Strategy will be superseded by the new Local Plan 2031, which is expected to provide for a higher level of growth, this initial stage of work provided a baseline against which the potential effects of higher levels of growth could then be assessed (the second stage of work).

Options for levels of housing growth

- 1.21 The Council has identified four options for higher levels of housing growth at each of the towns and larger villages in South Oxfordshire than set out in the adopted Core Strategy. As a starting point for the HRA of the Local Plan 2031, these growth options have been assessed in terms of their likely effects on European sites and where likely significant effects could not be ruled out, options for mitigation have been investigated. The findings from this HRA work will be used to help inform the Council's preferred housing distribution strategy in the emerging Local Plan 2031.

Structure of this report

- 1.22 This section has introduced the background to the HRA work that has been undertaken and presented in this report. The remainder of the report is structured as follows:
- **Section 2: Approach to the HRA** describes the methodology that has been used for this HRA work.
 - **Section 3: HRA of spatial distribution strategy** summarises the findings of the first stage of the HRA work and concludes whether significant effects on European sites are likely to result from any of the housing provisions for the villages.
 - **Section 4: HRA of alternative growth scenarios** describes the findings of the HRA work that has been carried out in relation to the four options for the level of housing growth to be included in the Local Plan 2031.
 - **Section 5: Conclusions** summarises the findings of the HRA work undertaken and sets out recommendations for the Local Plan 2031.

2 Approach to the HRA

- 2.1 This section describes the methodology that has been used for the HRA work presented in this report.

Updating the evidence base

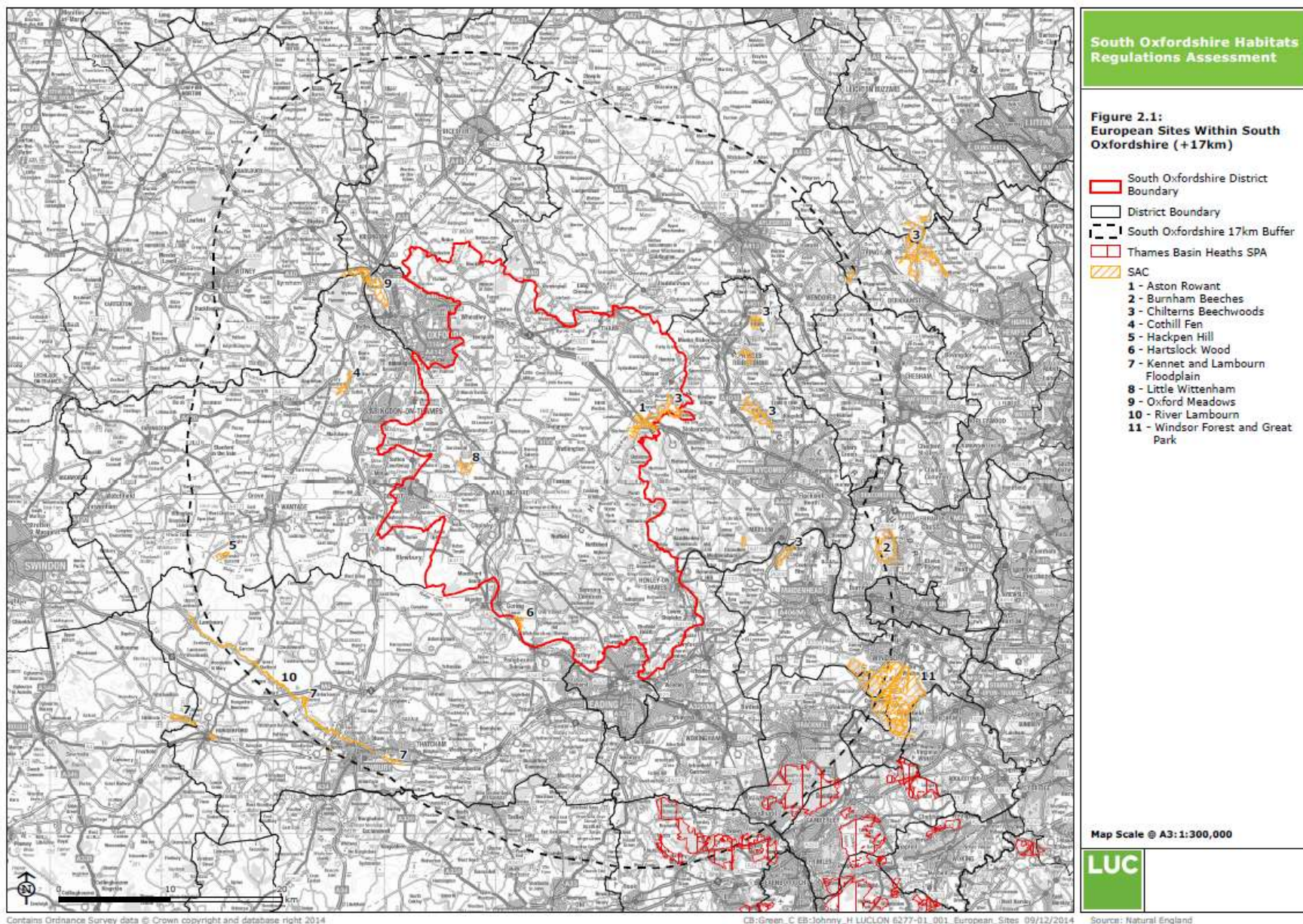
- 2.2 As described in **Section 1**, information about the qualifying features and vulnerabilities of the European sites in and around South Oxfordshire District was presented in the HRA report for the Core Strategy and in Appendix 3 of the SA Scoping Report for the Local Plan 2031. This information has been reviewed and collated to form a robust evidence base for the current HRA work. No updates to the information about European sites that was presented in Appendix 3 of the Scoping Report were required as it was compiled recently. However, it will be necessary to review this information again during later stages of the HRA for the Local Plan 2031 to ensure that it remains up-to-date.

European sites included in the assessment

- 2.3 The HRA of the Core Strategy took into account the six European sites that lie within 17 km of the four main towns in South Oxfordshire (Didcot, Thame, Wallingford and Henley). This buffer area was identified as appropriate at the time because the main growth areas in South Oxfordshire would be concentrated around the four main towns and, while smaller allocations would be made at the larger villages, detailed consideration of these would only be possible when allocations were made. The 17 km buffer distance, which was subject to consultation with Natural England, reflected the average travel to work distance in the district and recognised the fact that the effects of development within South Oxfordshire may be transmitted to European sites outside of the district boundary.
- 2.4 The information set out in the June 2014 SA Screening Report about the qualifying features and sensitivities of European sites covered the 12 European sites which lie within 17 km of the district boundary rather than within 17 km of the four main towns. This larger buffer area reflects the fact that development across the district as a whole is being considered during the preparation of the Local Plan 2031.
- 2.5 The same, larger buffer area has been used during this current stage of HRA work and all of the 12 European sites within 17 km of the district boundary have been included in the assessment. Using a 17 km buffer around the four main towns only (as was the case with the HRA of the Core Strategy) would not be appropriate as development outside of those areas is being assessed during both stages of this HRA work. The buffer area of 17 km around the whole district is larger (and therefore more precautionary) than that used during the HRA of the Core Strategy and is considered appropriate for ensuring that all European sites that could potentially be significantly affected by development are identified and included in the assessment.
- 2.6 The following European sites fall within 17 km of South Oxfordshire District and have been included in the HRA:
- Aston Rowant SAC.
 - Burghnam Beeches SAC.
 - Chiltern Beechwoods SAC.
 - Cothill Fen SAC.
 - Hackpen Hills SAC.
 - Hartslock Wood SAC.

- Kennett and Lambourn Floodplain SAC.
- Little Wittenham SAC.
- Oxford Meadows SAC.
- River Lambourn SAC.
- Thames Basin Heaths SPA.
- Windsor Forest and Great Park SAC.

2.7 Detailed information about the location, qualifying features and vulnerabilities of the European sites included in the assessment is presented in **Appendix 1**. The locations of the European sites are mapped in **Figure 2.1** overleaf.



Assessment of potential in-combination effects

- 2.8 Regulation 102 of the Amended Habitats Regulations 2010 requires an Appropriate Assessment where “a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site”. Therefore, where likely significant effects are identified, it is necessary to consider whether there may also be significant effects in combination with other plans or projects.
- 2.9 The first stage in identifying ‘in-combination’ effects involves identifying which other plans and projects, in addition to the development proposed in South Oxfordshire, may affect the European sites that were the focus of this assessment. Information about other plans that could potentially lead to significant effects on each European site in combination with the development proposed in South Oxfordshire was set out in the site information tables in the June 2014 SA Scoping Report for the Local Plan 2031. This information, which has been collated and presented in **Appendix 1**, has been reviewed and updated to reflect the current status of the relevant plans.
- 2.10 The purpose of the review of other plans was to identify any components that could have an impact on the European sites that could also be significantly affected by development in South Oxfordshire. For example, proposals for development near to these European sites could have implications in terms of increased traffic, water use and recreation pressure and infrastructure development. The potential for the effects of these plans to combine with the effects of development in South Oxfordshire has been considered in the next chapters and will continue to be assessed, where necessary, during further iterations of the HRA.

HRA screening methodology

- 2.11 The up-to-date evidence base and the findings of the HRA work that was carried out for the Core Strategy and the Local Plan 2031 Issues and Scope document have been drawn on to inform a HRA screening assessment of:
- The **spatial distribution strategy** of housing between the larger villages (in line with the level of growth set out in the Core Strategy).
 - The four **alternative growth scenarios** for the Local Plan 2031.
- 2.12 For the spatial distribution strategy, a screening matrix was prepared in order to assess whether the housing provision to each larger village would be likely to have a significant effect on European sites. The findings are summarised in **Section 3** and the detailed screening matrix can be found in **Appendix 2**.
- 2.13 A ‘traffic light’ approach was used to record the likely effects on European sites and their qualifying habitats and species, using the colour categories shown below.

Red	There are likely to be significant effects (Appropriate Assessment required).
Amber	There may be significant effects, but this is currently uncertain (Appropriate Assessment required).
Green	There are unlikely to be significant effects (Appropriate Assessment not required).

- 2.14 The screening assessment for the four alternative growth scenarios has been undertaken using a more qualitative approach, drawing on the findings of the HRA screening for the spatial distribution strategy. For each potential type of effect, consideration has been given to whether the HRA findings for the Core Strategy level of growth would be affected by higher levels of growth, taking into account the proposed distribution under each scenario. Where possible, distinctions have been made between the growth options in terms of the likelihood of significant effects occurring, although it is generally difficult to identify a threshold level of growth beyond

which significant effects become likely. This element of the HRA work has taken into account the higher levels of growth proposed at the four main towns in addition to the growth proposed at the larger villages. The findings of the HRA for the alternative growth scenarios are presented in **Section 4**.

- 2.15 A risk-based approach involving the application of the precautionary principle was adopted throughout both elements of the HRA work, such that a conclusion of 'no significant effect' was only reached where it was considered very unlikely, based on current knowledge and the information available, that a proposal or scenario would have a significant effect on the integrity of a European site.
- 2.16 Particular consideration has been given to the possible pathways along which effects may be transmitted from activities associated with the housing provisions to features contributing to the integrity of the European sites (e.g. groundwater, air, river catchments etc.), using spatial data where available.
- 2.17 For the screening of the spatial distribution strategy, consideration has been given to how the individual housing provisions might combine to have a significant effect on a particular European site, drawing from the HRA work that was carried out for the Core Strategy and which defined the total housing figure for the larger villages taken together. Although it was not necessary to assess housing provisions for the four main towns during this stage of the HRA (as this was already assessed in the HRA of the Core Strategy) the potential for the provisions to the main towns to combine with those now being considered for the larger villages has been considered.
- 2.18 During the screening of the four growth scenarios, given the uncertainty at this stage of the Plan process about where the housing provision will be allocated within each village, it has been necessary to assume that housing could be allocated in a 'worst case' location in terms of its potential to have adverse effects on nearby European sites.
- 2.19 Until 2008, according to the EC Guidance¹¹, mitigation measures were not generally considered as part of the screening stage. However, a High Court judgement from relevant case law¹² found this did not need to be the case. Therefore, consideration has also been given during the screening stage to the potential for implementation of mitigation measures such as good practice and other statutory safeguards (e.g. Environmental Permitting regime etc.) to make significant effects unlikely to occur.

Screening assumptions and information used in reaching conclusions about likely significant effects

- 2.20 During this HRA screening, the findings of the screening and Appropriate Assessment work that was carried out during the HRA of the Core Strategy have been drawn on as relevant. In some cases, this has enabled more detailed conclusions to be reached during the screening assessment. The following assumptions were applied when assessing the likely significant effects on European sites.

Physical loss of or damage to habitat

- 2.21 Development would take place within the named towns and villages in line with the proposed housing figures; therefore only European sites in close proximity to the relevant towns or villages could be affected in relation to physical loss of or damage to habitat. None of the towns or villages has European sites within or adjacent to them where habitat loss could occur as a result of housing development. Loss of habitat from outside of the boundaries of a European site could still affect the integrity of that site if it occurs in an area used by the qualifying species of the site (e.g. for offsite breeding, foraging or roosting). However, the towns and villages where housing development is being assessed are all located some distance from the nearest European sites – the closest European site to one of the settlements is Hartslock Wood SAC which is approximately 1.25 km from Goring and most European sites are significantly further from the nearest towns/villages where housing is being assessed.

¹¹ *Assessment of plans and projects significantly affecting European sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission Environment DG, November 2001.

¹² Judgment of Sullivan J in Dilly Lane litigation (CO/7623/2007) handed down 1 May 2008 and issued 2 June 2008..

2.22 Several of the European sites included in the HRA have transient species amongst their qualifying features which could travel outside of the site to make use of other areas of habitat. The European sites that have transient species amongst their qualifying features are:

- Chilterns Beechwoods SAC – this site is located approximately 1.5 km at the nearest point from Chinnor (the closest settlement where housing provision is being assessed). This is considered to be far enough that effects on the qualifying stag beetle can be ruled out in relation to offsite habitat loss/damage.
- Little Wittenham SAC – this site is located approximately 2 km at the nearest point from Berinsfield (the closest settlement where housing provision is being assessed). This is considered to be far enough that effects on the qualifying great crested newt can be ruled out in relation to offsite habitat loss/damage.
- River Lambourn SAC – this site is located approximately 15 km outside of the district and the qualifying features of the site which are transient species (brook lamprey and bullhead) are aquatic and so are restricted in terms of where they will travel. Therefore, likely significant effects on this European site in relation to offsite habitat loss/damage can be ruled out.
- Kennet and Lambourn Floodplain SAC – this site is located approximately 15 km outside of the district. This is considered to be far enough that effects on the qualifying Desmoulin's whorl snail can be ruled out in relation to offsite habitat loss/damage.
- Windsor Forest and Great Park SAC – this site is located approximately 13 km outside of the district. This is considered to be far enough that effects on the qualifying violet click beetle can be ruled out in relation to offsite habitat loss/damage.
- Thames Basin Heaths SPA – this site is located approximately 13 km outside of the district. This is considered to be far enough that effects on its qualifying bird species can be ruled out in relation to the loss of or damage to offsite habitat used for breeding, foraging or roosting, particularly during breeding seasons. In coming to this judgement, we have made reference to the Thames Basin Heaths SPA Delivery Framework¹³. This document has been endorsed by the Thames Basin Heaths Joint Strategic Partnership Board, the body established to agree arrangements for the long term protection of the SPA. The Framework advises that avoidance measures are necessary in relation to all residential development within a 'Zone of Influence' from 400 m to 5 km from the perimeter of the SPA and that applications for large scale development (over 50 houses) between 5 km and 7 km from the edge of the SPA should be assessed on a case by case basis. There is a presumption against development within 400 m of the SPA unless an Appropriate Assessment demonstrates that the development will not have an adverse effect on the integrity of the SPA.

2.23 **Therefore, it is assumed that effects from physical loss of or damage to habitat are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Noise, vibration and light pollution

2.24 Noise and vibration effects, e.g. during the construction of new housing development, are most likely to disturb bird species and are thus a key consideration with respect to European sites where birds are the qualifying features, although such effects may also impact upon some mammals and fish species. Artificial lighting at night (e.g. from street lamps, flood lighting and security lights) is most likely to affect bat populations, and therefore have an adverse effect on the integrity of European sites where bats are a qualifying feature. We have assumed that the effects of noise, vibration and light are most likely to be significant if development takes place within 500 metres of a European site with qualifying features sensitive to these disturbances, or mapped off-site breeding, foraging or roosting areas.

2.25 Only Little Wittenham SAC, Aston Rowant SAC, Chilterns Beechwoods SAC and Hartslock Wood SAC are within or immediately adjacent to the district boundary, and none of those sites are within close enough proximity of the towns and villages where development is proposed to potentially be affected in relation to noise, vibration and light pollution.

¹³ Thames Basin Heaths Special Protection Area Delivery Framework, Thames Basin Heaths Joint Strategic Partnership Board, 2009.

- 2.26 **Therefore, likely significant effects in relation to noise, vibration and light pollution were able to be ruled out and did not need to be considered further.**

Air pollution

- 2.27 Air pollution is most likely to affect European sites where plant, soil and water habitats are the qualifying features, but some qualifying animal species may also be affected, either directly or indirectly, by any deterioration in habitat as a result of air pollution. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen availability that can then affect plant health, productivity and species composition.
- 2.28 In terms of vehicle traffic, nitrogen oxides (NO_x, i.e. NO and NO₂) are considered to be the key pollutants. Deposition of nitrogen compounds may lead to both soil and freshwater acidification, and NO_x can cause eutrophication of soils and water.
- 2.29 Based on the Highways Agency Design for Road and Bridges (DMRB) Manual Volume 11, Section 3, Part 1¹⁴ (which was produced to provide advice regarding the design, assessment and operation of trunk roads (including motorways)), it is assumed that air pollution from roads is unlikely to be significant beyond 200 m from the road itself. Where increases in traffic volumes are forecast, this 200 m buffer needs to be applied to the relevant roads in order to make a judgement about the likely geographical extent of air pollution impacts.
- 2.30 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied at the screening stage of an assessment of a plan or project, to ascertain whether there are likely to be significant impacts associated with routes or corridors. Based on the DMRB guidance, affected roads which should be assessed are those where:
- Daily traffic flows will change by 1,000 AADT (Annual Average Daily Traffic) or more; or
 - Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or
 - Daily average speed will change by 10 km/hr or more; or
 - Peak hour speed will change by 20 km/hr or more; or
 - Road alignment will change by 5 m or more.
- 2.31 Traffic forecast data (based on the planned level of growth) are therefore needed to determine if increases in vehicle traffic in and around South Oxfordshire are likely to be significant.
- 2.32 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) might be likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT). As such, where a site is not within 200 m of a motorway or 'A' road, likely significant effects from traffic-related air pollution were ruled out.
- 2.33 The European sites around South Oxfordshire that are within 200 m of strategic roads are Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC. Therefore, where there could be an increase in vehicle traffic in and around South Oxfordshire, the potential for these sites to be affected as a result of increased air pollution was identified in the screening exercise.

Impacts of recreation

- 2.34 Recreation activities and human presence more generally can have an adverse impact on the integrity of a European site, for example as a result of disturbance of sensitive animal species, trampling of plant species or habitat erosion. Where development is likely to result in an increase in the local population, the potential for an increase in visitor numbers and the associated impacts at sensitive European sites has been considered.
- 2.35 We have assumed that all of the sites within the scope of the HRA are vulnerable to recreation impacts such as erosion, trampling or species disturbance to some degree. Those European sites that are closest to, most accessible to or most attractive to the residents of the towns and villages where development is proposed are most likely to be affected. The South Oxfordshire Open

¹⁴ Design Manual for Road and Bridges. Highways Agency. <http://dft.gov.uk/ha/standards/dmr/index.htm>

Space User Survey (2005) reported that 35% of people are prepared to travel for 15 minutes and 45% of people are prepared to travel by car to access natural and semi-natural greenspace. It is difficult to convert these statistics into an average travel distance by all travel modes to access natural and semi-natural greenspace. As a benchmark, therefore, we have made reference to the 'Zone of Influence' identified by the Thames Basin Heaths SPA Delivery Framework¹⁵. Whilst it is recognised that the various European sites scoped into this HRA have different designated features to Thames Basin Heaths SPA, the SPA Delivery Framework is primarily concerned with avoiding adverse recreational or urbanising effects from residential development and the buffer distances it defines are judged to provide a reasonable proxy for the distance from housing development within which likely significant recreational effects cannot be ruled out.

- 2.36 As set out above in relation to loss or damage of habitat, the Framework advises that there is presumption against development within 400 m of the European site (assumed adverse effect on integrity unless site-specific Appropriate Assessment demonstrates otherwise), that avoidance measures are necessary in relation to all residential development within a Zone of Influence from 400 m to 5 km from the perimeter of the European site and that applications for large scale development (over 50 houses) between 5 km and 7 km from the edge of the European site should be assessed on a case by case basis. None of South Oxfordshire's settlements falls within 400 m of a European site. The 5 km / 7 km buffer distances have been applied in Chapter 4 to determine whether likely significant effects from recreation can be ruled out for each of the growth scenarios.

Water quantity and quality

- 2.37 Where proposals would involve an increase in demand for water abstraction and treatment it is possible that the integrity of European sites could be affected as a result of changes to water quantity or quality or to flow regimes. It is considered that the potential exists for this type of impact to affect Burnham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC, which are all known to be vulnerable to changes in water quality or quantity.

¹⁵ Thames Basin Heaths Special Protection Area Delivery Framework, Thames Basin Heaths Joint Strategic Partnership Board, 2009.

3 HRA of spatial distribution strategy

- 3.1 This section summarises the findings of the HRA screening assessment of the spatial distribution of housing between the 12 larger villages in South Oxfordshire, based on the overall scale of housing growth set out in the adopted Core Strategy.

Screening conclusions

- 3.2 The detailed HRA screening matrix for the spatial distribution strategy can be found in **Appendix 2** and the findings are summarised below.

Physical loss of habitat

- 3.3 As described in **Section 2**, none of the villages where housing provisions are being assessed are within close enough proximity of European sites for physical loss of or damage to habitats to affect the integrity of European sites.
- 3.4 Therefore, **effects from physical loss of habitat are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Noise, vibration and light pollution

- 3.5 None of the villages where housing provisions are being assessed are within 500 m of European sites; therefore **effects from non-physical disturbance including noise, vibration and light pollution are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Air pollution

- 3.6 All of the housing provisions at the 12 villages could result in an increase in the population of South Oxfordshire and so could result in an increase in vehicle numbers on the local road network. Some of the European sites in and around South Oxfordshire are within 200 m of the strategic road network and so could be significantly affected by an increase in air pollution. These sites are Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC.
- 3.7 However, none of the roads that are within 200 m of the above European sites lead directly to or from any of the villages where development is proposed. It is also possible that increases in vehicle traffic from population growth may be mitigated by implementing relevant local planning policies such as those relating to the provision of sustainable transport links.
- 3.8 Because the housing numbers proposed at each village are relatively small (between 20 and 159 homes), it is more likely that any significant effects associated with air quality would result from the housing allocations in combination, which has been assessed separately through the Core Strategy of the HRA. That HRA concluded that the total housing allocation in the Core Strategy would not have likely significant effects in relation to air quality. Therefore, it is concluded that **effects from increased air pollution are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Impacts of recreation

- 3.9 Most of the villages where housing allocations have been assessed are located some distance from the nearest European sites, so there are unlikely to be significant increases in visitor numbers for day-to-day activities such as dog walking. However, the HRA of the Core Strategy reflected

evidence from the PPG17 Study¹⁶ which showed that people may be willing to travel for up to 15 minutes' drive time to access sites like the SACs included in this HRA. The following villages are located within 7 km of European sites, and so may be most likely to experience an increase in recreation pressure:

- Benson (Little Wittenham SAC).
- Berinsfield (Little Wittenham SAC).
- Chalgrove (Little Wittenham SAC).
- Chinnor (Aston Rowant SAC, Chilterns Beechwoods SAC).
- Cholsey (Hartslock Wood SAC, Little Wittenham SAC).
- Crowmarsh Gifford (Little Wittenham SAC).
- Goring (Hartslock Wood SAC).
- Watlington (Aston Rowant SAC, Chiltern Beechwoods SAC).
- Woodcote (Hartslock Wood SAC).

- 3.10 It may be possible to mitigate the effects of increased recreation pressure at European sites by ensuring that new housing development incorporates appropriate green infrastructure, or is well-located in relation to other accessible natural greenspace. This could be addressed through the implementation of appropriate local planning policies. In addition, mitigation for the effects of visitor pressure is already being implemented in some locations through visitor management – for example, the HRA of the Core Strategy noted that public access to certain areas of Little Wittenham SAC is already restricted to avoid disturbance to the qualifying great crested newt.
- 3.11 Because the housing numbers proposed at each village are relatively small (between 20 and 159 homes), it is more likely that any significant effects associated with increased recreation pressure would result from the housing allocations in combination, which has been assessed separately through the Core Strategy of the HRA. That HRA concluded that the total housing allocation in the Core Strategy would not have likely significant effects in relation to increased recreation pressure. Therefore, it is concluded that **effects from increased recreation pressure are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Water quality and quantity

- 3.12 All of the housing provisions at the 12 villages could result in an increase in the population of South Oxfordshire and so could result in an increase in demand for water abstraction and treatment. This could affect the integrity of European sites as a result of changes in hydrological regimes. Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC are all known to be vulnerable to changes in water quality or quantity.
- 3.13 Because the housing numbers proposed at each village are relatively small (between 20 and 159 homes), it is more likely that any significant effects associated with water quality and quantity would result from the housing allocations in combination, which has been assessed separately through the Core Strategy of the HRA. That HRA concluded that the total housing allocation in the Core Strategy would not have likely significant effects in relation to water quality or quantity. Therefore, it is concluded that **effects from increased demand for water abstraction and treatment are not likely to occur at any European sites as a result of the spatial distribution strategy.**

Cumulative effects

- 3.14 As described in **Section 2**, it is necessary to consider the likely effects of the total housing allocation for the villages as well as the effects of the individual allocations. As described above,

¹⁶ PPG17 Study: Sport and Recreation Facilities Assessment (2008)

for most types of effects (increased air pollution from vehicle traffic, increased recreation pressure and increased demand for water abstraction and treatment) it is the combined effects of the development proposed at the villages which is more likely to have an effect, because of the relatively small housing allocations made at some of the villages. The effects of the total housing allocation for the four main towns and 12 larger villages have already been assessed during the HRA of the Core Strategy, which concluded that there would be no likely significant effects on European sites. Therefore, it can be concluded that the cumulative effects of the housing allocations for the 12 villages would not be significant, taking into account the mitigation outlined above.

In-combination effects

- 3.15 As described in **Section 2**, information is provided in **Appendix 1** about other plans that may have the potential for significant effects in combination with the development proposed in South Oxfordshire. At this very early stage in the preparation of the Local Plan 2031 it has not been possible to establish with any certainty the likelihood of significant effects on European sites resulting from the development proposed in the district. Therefore, it is also not possible to assess the likelihood of there being significant effects in combination effects with other plans and projects. Further consideration will need to be given to this issue as the HRA is progressed, in particular in relation to the potential increases in vehicle traffic, recreation pressure and demand for water abstraction and treatment.

4 HRA of alternative growth scenarios

- 4.1 This section describes the findings of the HRA of the alternative growth scenarios that are being considered by South Oxfordshire District Council for the Local Plan 2031. The four alternative scenarios all represent a higher level of growth than that set out in the Core Strategy, as shown in **Table 4.1** below.

Table 4.1: Growth scenarios for the Local Plan 2031

Settlement	Core Strategy growth	Scenario 1: +30%	Scenario 2: +50%	Scenario 3: +75%	Scenario 4: +100%
Didcot	6,300	8,190	9,450	11,025	12,600
Henley	400	520	600	700	800
Thame	775	1,008	1,163	1,356	1,550
Wallingford	555	722	833	971	1,110
Benson	125	163	188	219	250
Berinsfield	109	142	164	191	218
Chalgrove	80	104	120	140	160
Chinnor	159	207	239	278	318
Cholsey	128	166	192	224	256
Crowmarsh Gifford	48	62	72	84	96
Goring	105	137	158	184	210
Nettlebed	20	26	30	35	40
Sonning Common	138	179	207	242	276
Watlington	79	103	119	138	158
Wheatley	50	65	75	88	100
Woodcote	73	95	110	128	146
Total	9,144	11,887	13,716	16,002	18,288

- 4.2 As described in **Section 2**, the nature of the growth scenarios means that the use of a screening matrix is not appropriate as it is not generally possible to make clear distinctions between the levels of growth in terms of their relative likelihood of having significant effects on European sites. Therefore, the four scenarios have been subject to HRA screening in a more qualitative way and the findings are described below by type of effect. The assumptions applied during the screening of the spatial distribution strategy and the findings of that exercise (described in **Sections 2** and **3** respectively) have been taken into account as relevant. The four main towns as well as the 12 larger villages have been included in the screening of the growth scenarios.

Physical loss of/damage to habitat

- 4.3 As described in **Section 2**, the distance of the European sites in and around South Oxfordshire from the four main towns and 12 larger villages means that likely significant effects relating to habitat loss or damage from within the boundaries of a European site can be ruled out as a result of development at those locations. Even with higher levels of growth proposed under Scenarios 1-4, the development would still be located in those towns and villages away from European sites; therefore none of the four growth scenarios are likely to have significant effects in relation to physical loss of or damage to habitat from within the boundaries of any European sites.
- 4.4 Consideration needs to be given to the potential for loss of or damage to offsite habitat used by the qualifying species of the European sites. As described in **Section 2**, none of the villages

where housing provisions are being assessed are within close enough proximity of European sites for physical loss of or damage to habitats to affect the integrity of European sites.

- 4.5 Therefore, **effects from physical loss of habitat are not likely to occur at any European sites as a result of the four growth scenarios.**

Noise, vibration or light pollution

- 4.6 As described in **Section 2**, likely significant effects from non-physical disturbance such as noise, vibration or light pollution are assumed to only have the potential to occur where development takes place within 500 m of European sites which have qualifying features that are sensitive to such disturbance. All of the European sites within South Oxfordshire (+17km) are more than 500m from the towns and villages where development is proposed; therefore likely significant effects relating to noise, vibration and light pollution from development at those locations can be ruled out.
- 4.7 Even with higher levels of growth proposed under Scenarios 1-4, the development would still be located in those towns and villages, more than 500 m away from European sites; therefore **none of the four growth scenarios are likely to have significant effects in relation to noise, vibration or light pollution.**

Air pollution

- 4.8 The HRA of the total Core Strategy housing figure and the spatial distribution strategy (**Section 3**) have both concluded that there would be no likely significant effects on European sites as a result of increased air pollution. However, higher levels of housing growth are likely to result in increases in the number of vehicles on the roads in and around South Oxfordshire and likely significant effects on European sites resulting from air pollution may therefore be more likely to occur. As described in **Section 2**, the European sites that are within 200 m of the strategic road network and so could be affected in this way are Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC.
- 4.9 In the absence of detailed traffic modelling for the four growth scenarios it is not possible to draw solid conclusions regarding their relative likelihood of having significant effects on the above European sites, although such effects may be more likely on major roads close to where the level of growth proposed is highest rather than at those European sites more remote from South Oxfordshire's main towns. However, effects may be able to be mitigated to some extent through the provision of sustainable transport links. Public transport services may in fact be more viable and therefore more likely to be provided where higher levels of residential development take place.
- 4.10 **Therefore, it is currently uncertain whether the higher levels of housing development proposed under the four alternative growth scenarios would have likely significant effects in relation to increased air pollution on Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC.** In order to investigate this issue in more detail, traffic modelling data is required. In particular, information about the likely increase in AADT along the 'A' roads that lie within 200 m of the above European sites is required, as well as information about predicted changes in average speed along those routes. Should this reveal significant increases in traffic then air quality modelling may also be required before likely significant effects can be ruled out.

Impacts of recreation

- 4.11 The HRA of the total Core Strategy housing figure and the spatial distribution strategy (**Section 3**) have both concluded that there would be no likely significant effects on European sites as a result of increased recreation pressure. However, higher levels of housing growth are likely to result in proportional increases in the number of visitors to the European sites in and around South Oxfordshire, so that effects on European sites resulting from erosion, trampling and species disturbance may be more likely to occur. As described in **Section 2**, we have assumed that likely significant effects in relation recreation cannot be ruled out for any European sites within 5 km of any residential development or within 5 to 7 km of individual developments of more than 50

houses could potentially be affected in this way. **Table 4.2** shows which of the European sites scoped into the HRA fall within the buffer distances of settlements where housing growth is proposed; none is within 400 m of a European site.

Table 4.1 Proximity of European sites to housing growth settlements

Settlement	European sites >0.4 km, <= 5.0 km	European sites >5.0 km, <= 7.0 km
Main towns		
Didcot	Little Wittenham SAC	
Henley		Chiltern Beechwoods SAC
Thame		Chiltern Beechwoods SAC
Wallingford	Little Wittenham SAC	
Larger villages		
Benson	Little Wittenham SAC	
Berinsfield	Little Wittenham SAC	
Chalgrove		Little Wittenham SAC
Chinnor	Aston Rowant SAC, Chiltern Beechwoods SAC	
Cholsey		Hartslock Wood SAC, Little Wittenham SAC
Crowmarsh Gifford	Little Wittenham SAC	
Goring	Hartslock Wood SAC	
Nettlebed		
Sonning Common		
Watlington	Aston Rowant SAC, Chiltern Beechwoods SAC	
Wheatley		
Woodcote	Hartslock Wood SAC	

- 4.12 Table 4.2 shows that Didcot, Wallingford, Benson, Berinsfield, Chinnor, Crowmarsh Gifford, Goring, Watlington and Woodcote are all between 400 m and 5.0 km of a European site. In addition, Henley, Thame, Chalgrove and Cholsey are within 5.0-7.0 km of European sites and housing growth of more than 50 dwellings is provided for at each of these settlements under all growth scenarios.
- 4.13 **Therefore, it is currently uncertain whether the higher levels of housing development proposed under the four alternative growth scenarios would have likely significant effects on European sites in relation to increased recreation pressure on Aston Rowant SAC, Chiltern Beechwoods SAC, Hartslock Wood SAC, and Little Wittenham SAC.** Further consideration will need to be given to recreation pressure on these European sites as the Local Plan 2031 is developed, and mitigation may need to be developed in proportion to the scale of housing growth proposed. It is recommended that the Council engages with Natural England to discuss the need for and potential components of any mitigation strategy for recreation effects. It may be necessary to undertake visitor survey work at relevant European sites to inform decision-making. It is recommended that the Local Plan 2031 should include policies requiring the provision of green infrastructure by new housing developments, either on-site or within easy walking distance. It is also recommended that the Local Plan 2031 incorporate a general policy providing protection for biodiversity, with specific reference to European sites.

Water quality and quantity

- 4.14 The HRA of the total Core Strategy housing figure and the spatial distribution strategy (**Section 3**) have both concluded that there would be no likely significant effects on European sites as a

result of increased demand for water abstraction and treatment. However, higher levels of housing growth are likely to mean proportional increases in demand and likely significant effects on European sites in relation to changes to hydrological regimes or deterioration of water quality may be more likely to occur. As described in **Section 2**, Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC are all known to be vulnerable to changes in water quality or quantity.

- 4.15 Thames Water's Water Resources Management Plan¹⁷ (WRMP) states that throughout Thames Water's supply area there is a low risk that the increased use of existing abstraction licences would cause deterioration of status under the Water Framework Directive. The conclusions of the plan are based on population projections in the area which took into account the planned levels of growth in each Local Authority as well as other demographic factors.
- 4.16 It should also be noted that there are established regulatory mechanisms over the treatment of waste water that take into account environmental impacts including likely significant effects on European sites, which should provide safeguards to ensure no adverse effects on integrity arise.
- 4.17 **However, in the absence of information about water availability in the relevant abstraction zones, or the level of available headroom at the relevant sewage treatment works, it is uncertain whether the growth scenarios would result in likely significant effects at the following vulnerable European sites as a result of increased demand for water abstraction and treatment: Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA, and Windsor Forest and Great Park SAC.** It is recommended that the Local Plan 2031 include a general policy providing protection for biodiversity, with specific reference to European sites. It is also recommended that consultation with Thames Water is undertaken, and that the findings of the forthcoming Water Cycle Study are drawn from when available, in order to inform the next stage of the HRA for the Local Plan 2031. Should this identify concerns, it may be necessary for the Local Plan 2031 to include policies requiring water efficiency measures within new housing developments that are additional to those contained in Building Regulations.

Appropriate Assessment

- 4.18 Following the screening stage, the plan-making authority is required under Regulation 102 of the Habitats Regulations 2010 to make an 'Appropriate Assessment' of the implications of the plan for European sites, in view of their conservation objectives. EC Guidance¹⁸ states that the Appropriate Assessment should consider the impacts of the plan (either alone or in combination with other projects or plans) on the integrity of European sites with respect to their conservation objectives and to their structure and function.
- 4.19 A site's integrity depends on it being able to sustain its 'qualifying features' (i.e. those Annex 1 habitats, Annex II species, and Annex 1 bird populations for which it has been designated) and to ensure their continued viability. A high degree of integrity is considered to exist where the potential to meet a site's conservation objectives is realised and where the site is capable of self-repair and renewal with a minimum of external management support. The Appropriate Assessment therefore needs to focus on those impacts judged likely to have an effect on the qualifying features of European sites, or where insufficient certainty regarding this remained at the screening stage.
- 4.20 The Appropriate Assessment focuses on those impacts that are judged likely to have a significant effect on the qualifying features of a European site, or where insufficient certainty regarding this remained at the screening stage. A conclusion needs to be reached as to whether or not a proposal would adversely affect the integrity of a European site. In order to try to reach a

¹⁷ Thames Water Final Water Resources Management Plan 2015-2040 (November 2014)

¹⁸ *Assessment of plans and projects significantly affecting European sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission Environment DG, November 2001.

conclusion, consideration was given to whether the predicted impacts of the proposals (either alone or in combination) have the potential to:

- Delay the achievement of conservation objectives for the site.
- Interrupt progress towards the achievement of conservation objectives for the site.
- Disrupt factors that help to maintain the favourable conditions of the site.
- Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.

4.21 An Appropriate Assessment is therefore required for all of the European sites in South Oxfordshire District (+17km) where likely significant or uncertain effects were not able to be ruled out during the HRA screening for the growth scenarios. This was the case in relation to:

- Increased air pollution at Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC.
- Increased recreation pressure resulting in erosion, trampling or species disturbance at Aston Rowant SAC, Chiltern Beechwoods SAC, Hartslock Wood SAC, and Little Wittenham SAC.
- Increased demand for water abstraction and treatment resulting in changes to hydrological regimes and/or water quality at Burnham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.

4.22 However, the data gaps that were identified during the HRA screening mean that further assessment is unlikely to result in any more certain conclusions being reached at this stage of the Plan making process with regards to the likelihood of significant effects on European sites. Therefore, it will be necessary to undertake further assessment in relation to the above potential effects during later stages of the HRA for the Local Plan 2031, as the required evidence becomes available and the Local Plan's proposals are defined in greater detail.

5 Conclusions

- 5.1 This report has presented the findings of two stages of HRA work:
- HRA of the spatial distribution of housing under the Core Strategy level of growth.
 - HRA of the four growth scenarios for the Local Plan 2031.
- 5.2 For the HRA of the spatial distribution strategy, it was concluded during the HRA screening that there would be no likely significant effects on European sites. While some data gaps were identified, the relatively small housing allocations at the villages meant that the effects of the housing allocations in combination were of most relevance to the assessment. The HRA work that was undertaken in relation to the Core Strategy, which considered the likely effects of the housing figure as a whole, was able to be drawn on.
- 5.3 The HRA screening of the four growth scenarios identified uncertainty regarding whether there would be likely significant effects in relation to increased air pollution, increased recreation pressure and increased demand for water abstraction and treatment. At this stage in the assessment and Plan making process, it was not possible to determine a scale of growth above which housing scenarios would be likely to have significant effects on European sites, although higher levels of growth are more likely to result in likely significant effects. In order to reach more certain conclusions during later stages of the HRA work for the Local Plan 2031 the following data will be required:
- Traffic data showing likely increases in Average Annual Daily Traffic (AADT) as a result of the Local Plan 2031 along the stretches of 'A' roads which lie within 200 m of Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC. Air quality modelling may also be required should these traffic projections reveal significant traffic increases in the vicinity of the European sites.
 - Information about levels of headroom at the sewage treatment works that serve the four main towns and 12 villages at which housing development is to be provided and about water availability in the relevant abstraction zones, in order to assess whether adverse effects could occur on the integrity of Burnham Beeches SAC, Cothill Fen SAC, Kennet and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA, and Windsor Forest and Great Park SAC.
 - Depending on the outcome of consultation with Natural England (see below), it may also be necessary to obtain data about recreational use of European sites, for example via visitor surveys, although specific data requirements cannot be identified at this early stage.

Recommendations

- 5.4 A number of recommendations for the Local Plan 2031 have been identified through the HRA work set out in this report, which should be taken into account by South Oxfordshire District Council as it progresses the Plan:
- The Local Plan 2031 should include a general policy seeking to protect and enhance biodiversity, with particular reference to European sites.
 - In relation to potential changes to hydrological regimes and/or water quality, the Local Plan 2031 should include a policy seeking to protect water quality. It may also need to consider policies requiring more stringent water efficiency measures in new housing development than specified in Building Regulations and phasing of additional wastewater treatment capacity alongside housing development, should information on water availability and wastewater treatment capacity identify concerns in relation to European sites.

- In relation to potential recreation pressure, the Local Plan 2031 should require green infrastructure to be provided as part of new housing developments. The Council should also engage with Natural England to discuss the need for and potential components of any mitigation strategy for recreation effects on European sites.
- In relation to potential air pollution effects, the Local Plan 2031 should give consideration to sustainable transport provision, ensuring that new housing developments are well-served by bus links, walking and cycle routes.

5.5 The implementation of these recommendations should help to provide mitigation for the potential effects of development on European sites.

Next steps

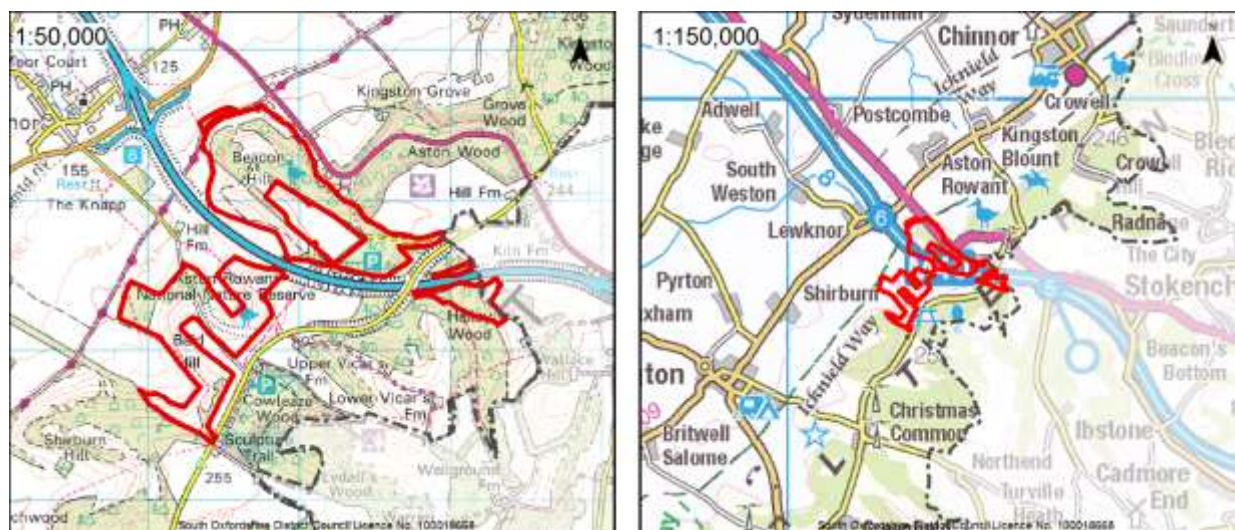
5.6 This HRA report will be subject to consultation with Natural England and made publicly available on South Oxfordshire District Council's website. As the Local Plan 2031 is progressed, the HRA work presented in **Section 4** will need to be updated to reflect the proposals within the emerging Plan.

LUC
January 2015

Appendix 1

European sites in and around South Oxfordshire

1. Aston Rowant Special Area of Conservation



Site description

Aston Rowant National Nature Reserve and SSSI is one of the largest surviving complexes of beech woodland, mixed scrub, juniper and chalk grassland habitats once widespread in the Chilterns but now largely fragmented by agricultural improvement, the cessation of traditional grazing systems and afforestation.

Protected species

H5130	Juniper on heaths or calcareous grassland
-------	---

H9130	Beech forests on neutral to rich soils
-------	--

Site Status*	100% in favourable condition
--------------	------------------------------

Special area of conservation objectives

- | | |
|---|--|
| 1 | Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site. |
| 2 | Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site. |

Key environmental conditions supporting the site

- Regular management to keep vegetation open and allow seedlings to establish
- Prevention of rabbit grazing on seedlings
- Minimal air pollution

Potential actions for the local plan

The local plan should contain policies that seek to protect or enhance the quality of SACs. Any development for recreational or access purposes on this site should also be carefully managed to ensure that it does not damage the SAC. This site is located near Chinnor which is a larger village in the South Oxfordshire Core Strategy identified for additional housing allocations. It has been preliminarily identified for an allocation of 159 new homes, although the exact site of this is yet to be established. The number of homes proposed at Chinnor may increase depending on the distribution strategy that the new local plan adopts.

Potential impacts from other plans

- The **proposed Wycombe Local Plan** is investigating whether the town of Risborough (roughly 5km to the east of Chinnor) can accommodate an additional 2,000-2,500 new homes. Increased usage of the M40

1. Aston Rowant Special Area of Conservation

motorway or B4009 resulting from development within our or other authorities' plans may also impact on the status of the site through increased air pollution.

- Oxfordshire County Council have unveiled a vision for their **emerging Local Transport Plan 4** which outlines potential improvements to Junction 9 (Oxford) of the M40; funding for this project is earmarked in the **Oxford and Oxfordshire City Deal and Oxfordshire Strategic Economic Plan**. Improvements to this junction may increase the attractiveness of the M40 as an access point to Oxford and therefore may bring more traffic along the motorway near Aston Rowant SAC / SSI. This could lead to increased noise and decreased air quality on the site.
- Network rail are also proposing a **new East-West Rail link** that will provide direct rail connections between London Marylebone and Oxford. This will mean that commuters may be able to access direct services to Oxford from Princes Risborough railway station that is around 7km from Chinnor.
- The **Chilterns AONB Management Plan 2014-2019** contains policies to promote and support action to enhance the condition of priority habitats and protected sites (SSSIs and SACs) within the AONB. This plan should help to improve the condition of the site.

Implications for the site without South Oxfordshire's Local Plan

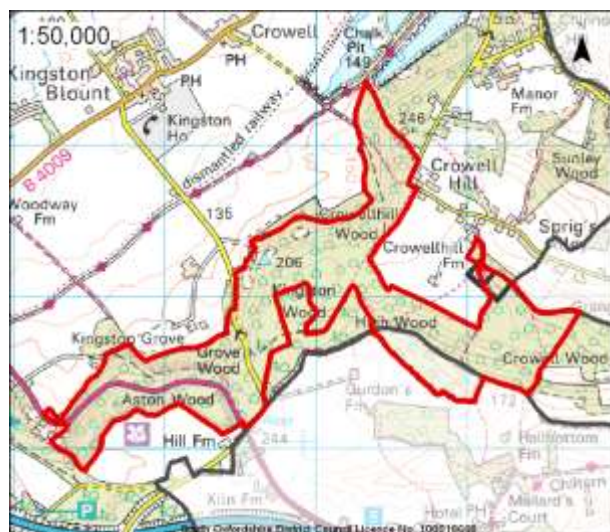
Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects such as traffic generation, domestic pet disturbance, and increased leisure and recreation use. Without a local plan and accompanying infrastructure delivery plan, it may also be difficult to justify developer contributions to improve the site.

This area may be particularly vulnerable to speculative development since it is close to excellent travel links to London and Oxford (M40 and Princes Risborough / Haddenham & Thame railway stations) and is adjacent to an area of outstanding natural beauty,.

Increased car use associated with residential development in this area may contribute to air pollution and a decline in air quality on the site.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

2. Chilterns Beechwood Special Area of Conservation



Site description

Aston Rowant Woods complex is of national importance as a large, unfragmented area of ancient semi-natural woodland characteristic of the Chilterns scarp. The rich flora includes no fewer than 52 species indicative of old woods. Over a hundred species of fungi are recorded. Paths, rides and glades are numerous, and the presence of boggy hollows and standing and fallen dead timber provide diverse niches for invertebrates.

Protected species

H6210 Dry grasslands and scrublands on chalk or limestone

H9130 Beech forests on neutral to rich soils

S1083 Stag beetle

Site Status* 100% in favourable condition

Special area of conservation objectives

- 1 Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
- 2 Subject to natural change, maintain or restore:
 - the extent and distribution of natural habitats, and habitats of protected species;
 - the structure and function of habitats, and habitats of protected species
 - the supporting processes on which protected species and their habits rely;
 - the population of protected species; and
 - the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Minimal air pollution
2. Managed public access
3. Appropriate management of grasslands
4. Absence of direct fertilisation

Potential actions for the local plan

The local plan should contain policies that seek to protect or enhance the quality of SACs. Any development for recreational or access purposes on this site should also be carefully managed to ensure that it does not damage the SAC. This site is located near Chinnor which is a larger village in the South Oxfordshire Core Strategy identified for additional housing allocations. It has been preliminarily identified for an allocation of 159 new homes, although the exact site of this is yet to be established. The number of homes proposed at Chinnor may increase depending on the distribution strategy that the new local plan adopts.

Potential impacts from other plans

2. Chilterns Beechwood Special Area of Conservation

- The **proposed Wycombe Local Plan** is investigating whether the town of Risborough (roughly 5km to the east of Chinnor) can accommodate an additional 2,000-2,500 new homes. Increased usage of the M40 motorway or B4009 resulting from development within our or other authorities' plans may also impact on the status of the site through increased air pollution.
- Oxfordshire County Council have unveiled a vision for their **emerging Local Transport Plan 4** which outlines potential improvements to Junction 9 (Oxford) of the M40; funding for this project is earmarked in the **Oxford and Oxfordshire City Deal and Oxfordshire Strategic Economic Plan**. Improvements to this junction may increase the attractiveness of the M40 as an access point to Oxford and therefore may bring more traffic along the motorway near Aston Rowant SAC / SSI. This could lead to increased noise and decreased air quality on the site.
- Network rail are also proposing a **new East-West Rail link** that will provide direct rail connections between London Marylebone and Oxford. This will mean that commuters may be able to access direct services to Oxford from Princes Risborough railway station that is around 7km from Chinnor.
- The **Chilterns AONB Management Plan 2014-2019** contains policies to promote and support action to enhance the condition of priority habitats and protected sites (SSSIs and SACs) within the AONB. This plan should help to improve the condition of the site.

Implications for the site without South Oxfordshire's Local Plan

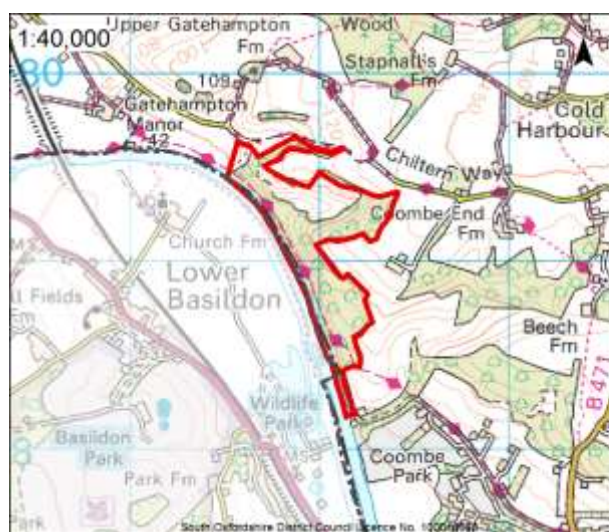
Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects such as traffic generation, domestic pet disturbance, and increased leisure and recreation use. Without a local plan and accompanying infrastructure delivery plan, it may also be difficult to justify developer contributions to improve the site.

This area may be particularly vulnerable to speculative development since it is close to excellent travel links to London and Oxford (M40 and Princes Risborough / Haddenham & Thame railway stations) and is adjacent to an area of outstanding natural beauty.

Increased car use associated with residential development in this area may contribute to air pollution and a decline in air quality on the site.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

3. Hartslock Wood Special Area of Conservation



Site description

Hartslock contains a mixture of semi-natural habitats which are characteristic of the Chiltern scarp. It includes an area of species-rich chalk downland and one of the few examples of ancient yew wood in the Chilterns, as well as semi-natural broadleaved woodland, chalk scrub and riverine fen.

Protected species

H6210 Dry grasslands and scrublands on chalk or limestone

H91J0 Yew dominated woodland

Site Status* 88% in favourable condition

Special area of conservation objectives

- 1 Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
- 2 Subject to natural change, maintain or restore:
 - the extent and distribution of natural habitats, and habitats of protected species;
 - the structure and function of habitats, and habitats of protected species
 - the supporting processes on which protected species and their habits rely;
 - the population of protected species; and
 - the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Appropriate management of grazing
2. Minimal air pollution
3. Absence of direct fertilization

Potential actions for the local plan

The local plan should contain policies that seek to protect or enhance the quality of SACs. Any development for recreational or access purposes on this site should also be carefully managed to ensure that it does not damage the SAC. This site is located near Goring which is a larger village in the South Oxfordshire Core Strategy identified for additional housing allocations. It has been preliminarily identified for an allocation of 105 new homes, although the exact site of this is yet to be established. The number of homes proposed at Goring may increase depending on the distribution strategy that the new local plan adopts.

Potential impacts from other plans

- The **Chilterns AONB Management Plan 2014-2019** contains policies to promote and support action to enhance the condition of priority habitats and protected sites (SSSIs and SACs) within the AONB. This plan

3. Hartslock Wood Special Area of Conservation

should help to improve the condition of the site.

- Any **development upstream on the River Thames** (or its tributaries) may affect the amount or quality of water that reaches the site.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects such as traffic generation, domestic pet disturbance, and increased leisure and recreation use. Without a local plan and accompanying infrastructure delivery plan, it may also be difficult to justify developer contributions to improve the site.

This area may be particularly vulnerable to speculative development since it is close to excellent travel links to London and Oxford (Goring railway station) and is within an area of outstanding natural beauty.

Increased car use associated with residential development in this area may contribute to air pollution and a decline in air quality on the site.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

4. Little Wittenham Special Area of Conservation



Site description

Little Wittenham is located beside the River Thames and consists of an area of woodland with ponds, as well as grassland and scrub on the slopes of a prominent hill. The underlying geology is made up by Lower chalk, Greensand and Gault Clay. The overlying clay soils are for the most part moderately calcareous. Great crested newts have been found throughout the site in a range of different habitats but the population is concentrated around one of the larger ponds in the woodland. Great crested newts are dependent on both terrestrial habitats (for foraging and refuge) and aquatic habitats (for breeding).

Protected species

S1166 Great crested newt

Site Status* 100% in favourable condition

Special area of conservation objectives

- 1 Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
- 2 Subject to natural change, maintain or restore:
 - the extent and distribution of natural habitats, and habitats of protected species;
 - the structure and function of habitats, and habitats of protected species
 - the supporting processes on which protected species and their habits rely;
 - the population of protected species; and
 - the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Suitable foraging and refuge habitat within 500 metres of the pond
2. Relatively unpolluted water of neutral PH
3. Some ponds deep enough to retain water throughout February to August at least one year in three

Potential actions for the local plan

The local plan should seek to preserve or enhance the biodiversity of the site. The site is on the edge of the proposed Science Vale Area Action Plan; if high levels of development are planned for in Science Vale this may impact on the SSSI / SAC at Little Wittenham. However, at this time there are no proposals for development near Little Wittenham. The nearest strategic site is roughly 2.5 km away at Slade End Farm in Wallingford which is already part of an adopted development plan (the core strategy).

The local plan should seek to preserve the key environmental conditions supporting the site by ensuring no potentially polluting development is allocated nearby.

4. Little Wittenham Special Area of Conservation

Potential impacts from other plans

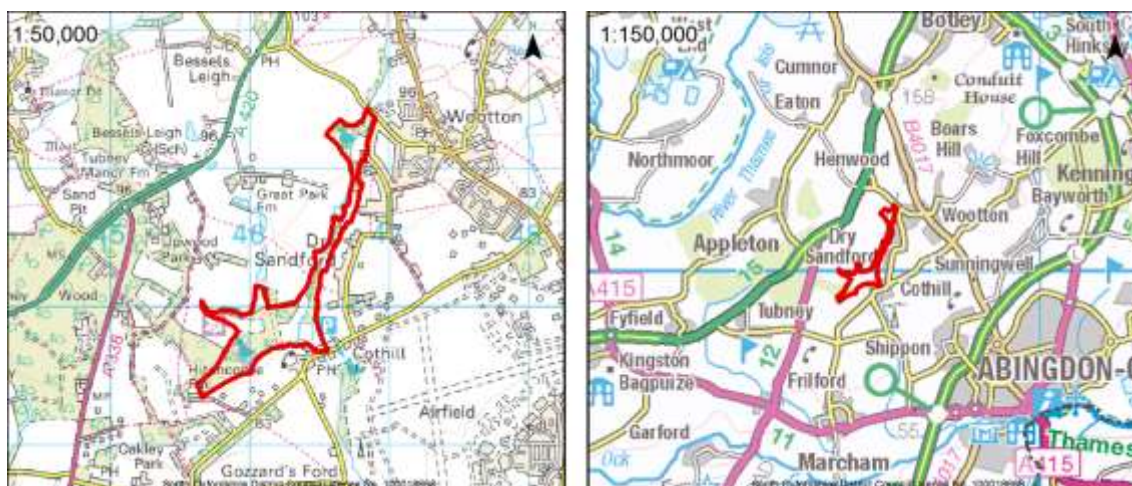
- Potential impact from development in the **Science Vale Area Action Plan** (see above)
- The **draft North Wessex Downs AONB Management Plan 2014-2019** aims to ensure that the characteristic habitats and species of the North Wessex Downs are conserved and enhanced.
- The **Thames Water Resource Management Plan 2015-2040** predicts an increase residential demand for water. Thames Water are therefore proposing demand management measures be implemented across the Thames Valley region including leakage reduction, progressive metering, enhanced water efficiency, and tariffs and behaviour change. The forecasted increased demand may threaten groundwater sources, but Thames Water is planning to mitigate this.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects such as traffic generation, domestic pet disturbance, and increased leisure and recreation use. Without a local plan and accompanying infrastructure delivery plan, it may also be difficult to justify developer contributions to improve the site.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

5. Cothill Fen Special Area of Conservation



Site description

Protected species

H7230	Alkaline Fens; Calcium-rich springwater-fed fens
H91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ; Alder woodland on floodplains
Site Status*	65% in favourable condition

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

1. High water table
2. Calcareous base rich water supply

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. It is roughly 2.5km from its closest point to the A34, which may have increased traffic pressures if the local plan allocates land near Didcot or in the Science Vale Area. However, this site is not particularly sensitive to air quality issues that would be associated with additional traffic. The likely impact of the local plan on this site is therefore minimal.

Potential impacts from other plans

- The **draft Vale of White Horse Local Plan 2031** is seeking to allocate a total of 1,210 new homes within 5km of the SAC. This may lead to a drawn down on groundwater and potential water quality issues arising from waste water disposal.
- The **Thames Water Resource Management Plan 2015-2040** predicts an increase residential demand for water. Thames Water are therefore proposing demand management measures be implemented across the Thames Valley region including leakage reduction, progressive metering, enhanced water efficiency, and tariffs and behaviour change. The forecasted increased demand may threaten groundwater sources, but Thames Water is planning to mitigate this.

5. Cothill Fen Special Area of Conservation

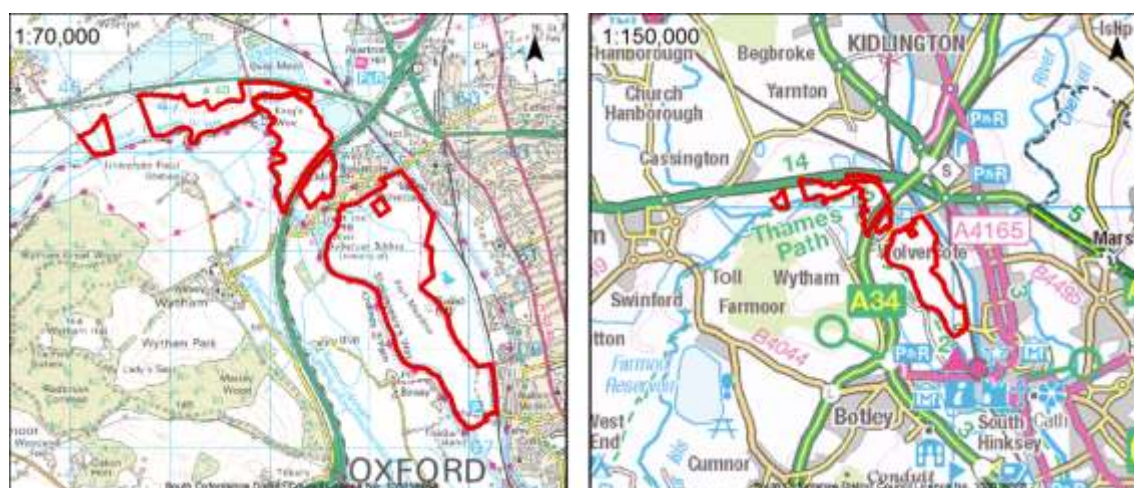
Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects on this site such as an increased pressure on the water table and water quality issues arising from waste water disposal.

As this site is outside the plan boundary and downstream from the site, the likely effects of development by appeal in South Oxfordshire would be minimal.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

6. Oxford Meadows Special Area of Conservation



Site description

This site is an amalgamation of three discrete, adjacent tracts of unimproved chalk grassland. Together they represent an extensive area of a habitat now uncommon in the Berkshire Downs.

Protected species

H6510	Lowland hay meadows
S1514	Apium repens; Creeping marshwort

Site Status*	100% in favourable condition
---------------------	------------------------------

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

- Maintenance of traditional hay cut
- Maintenance of appropriate grazing regime
- Minimal air pollution
- Absence of direct fertilization
- Balanced hydrological regime
- Absence of excessive nutrient enrichment of floodwaters

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is bisected by the A34 that connects the M40 in the north to the M4 in the south. It passes the town of Didcot in South Oxfordshire and is an important connection for Southern Oxfordshire with the city.

Although the local plan will not directly affect the status of the SAC it is likely to have indirect effects through traffic generation on the A34 through any residential and commercial allocations around the Didcot area. Increased traffic on the A34 is likely to decrease air quality in the SAC.

Potential impacts from other plans

6. Oxford Meadows Special Area of Conservation

- The **draft Vale of White Horse Local Plan 2031** is seeking to allocate a total of 1,210 new homes within 5km of the SAC. This may lead to a drawn down on groundwater and potential water quality issues arising from waste water disposal.
- The **Thames Water Resource Management Plan 2015-2040** predicts an increase residential demand for water. Thames Water are therefore proposing demand management measures be implemented across the Thames Valley region including leakage reduction, progressive metering, enhanced water efficiency, and tariffs and behaviour change. The forecasted increased demand may threaten groundwater sources, but Thames Water is planning to mitigate this.
- The **Oxford Core Strategy** allocates land at the Northern Gateway for 55,000m² of B-Class related job development, 200 dwellings, an emergency services centre, a hotel, and small retail units. A HRA Screening Report produced to support the **Northern Gateway Area Action Plan** did not predict any problematic cumulative air or water quality effects associated with the Cherwell, Oxford, and West Oxfordshire Local Plans. However, since the publication of the HRA Screening report, fundamental evidence supporting the housing numbers of all local authorities (Oxfordshire SHMA) has been published which may increase the significance of the impact on the SAC.

Implications for the site without South Oxfordshire's Local Plan

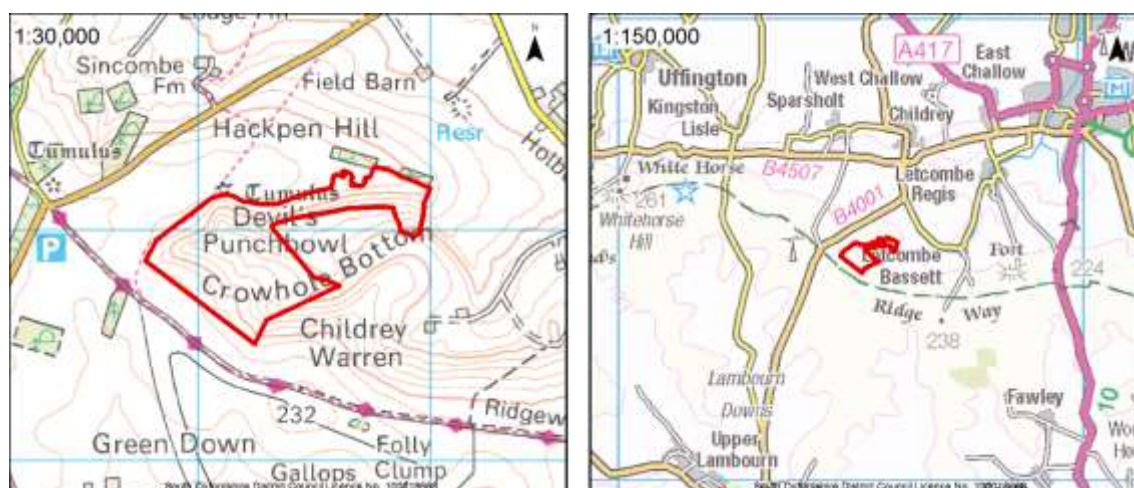
Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects on this site such as an increased pressure on the water table and water quality issues arising from waste water disposal, and traffic generation on the A34.

As this site is outside the plan boundary and downstream from the site, the likely effects of development by appeal in South Oxfordshire would be minimal.

There may also be indirect effects on this site such as an increased pressure on the water table and water quality issues arising from waste water disposal, although as this site is outside the plan boundary and downstream from the site, the likely effects of development by appeal in South Oxfordshire on water quality would be minimal.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

7. Hackpen Hill Special Area of Conservation



Site description

Protected species

H6210	Semi-natural dry grasslands and scrubland facies: on calcareous substrates; dry grassland and scrublands on chalk or limestone
S1654	Early gentian
Site Status*	100% in favourable condition

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Maintenance of appropriate grazing regime
2. Controlling rabbit numbers on the site

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. Furthermore, the site is not located on a main traffic route. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

- The draft [Vale of White Horse Local Plan 2031](#) is seeking to allocated 200 new homes at East Challow, around 3km from the SAC. This may lead to an increase in visitors to the site.

Implications for the site without South Oxfordshire's Local Plan

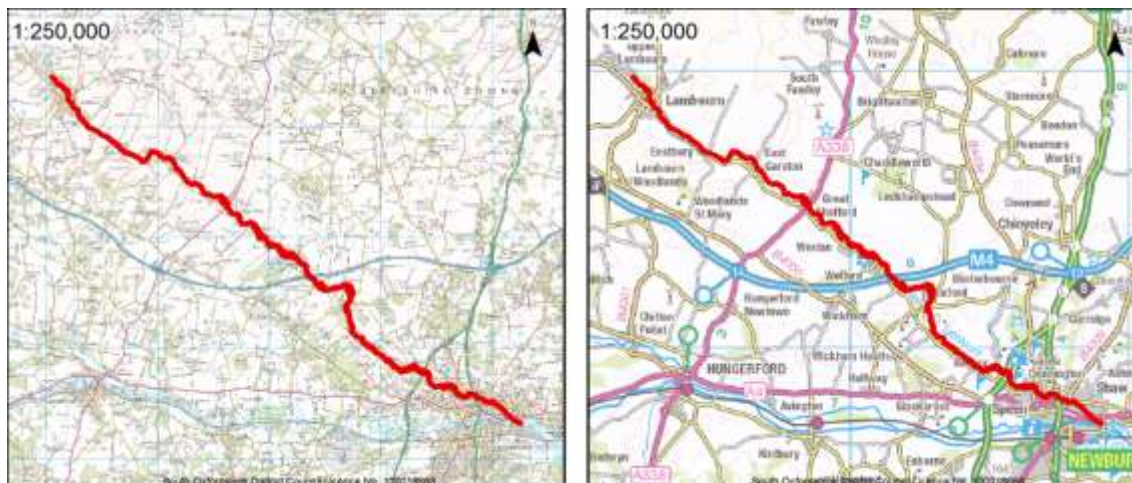
Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on an SAC, there may be indirect effects on this site such as an increased

7. Hackpen Hill Special Area of Conservation

visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

8. River Lambourne Special Area of Conservation



Site description

The River Lambourne is a classic example of a lowland chalk river. It rises 152 metres above sea level in Lynch Wood, north of Lambourn and flows down to a confluence with the River Kennet east of Newbury. The catchment that the River Lambourne drains is almost entirely chalk which results in a predominantly gravelly river bed. A key feature of this river is the tendency for the upper section to only flow during late autumn, winter and early spring. This is known as a 'winterbourne' and is a natural characteristic of chalk rivers. Any flora or fauna occurring in these stretches must be adapted to wide variations in flow, thus winterbourne sections tend to be less species-rich than the lower reaches which hold water all year round.

Protected species

H3260	Rivers with floating vegetation often dominated by water-crowfoot
S1096	Brook Lamprey
S1163	Bullhead

Site Status*	100% unfavourable; no change
---------------------	------------------------------

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Water quality
2. Water quantity
3. Habitat quality

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. Furthermore, the site is not located on a main traffic route. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

8. River Lambourne Special Area of Conservation

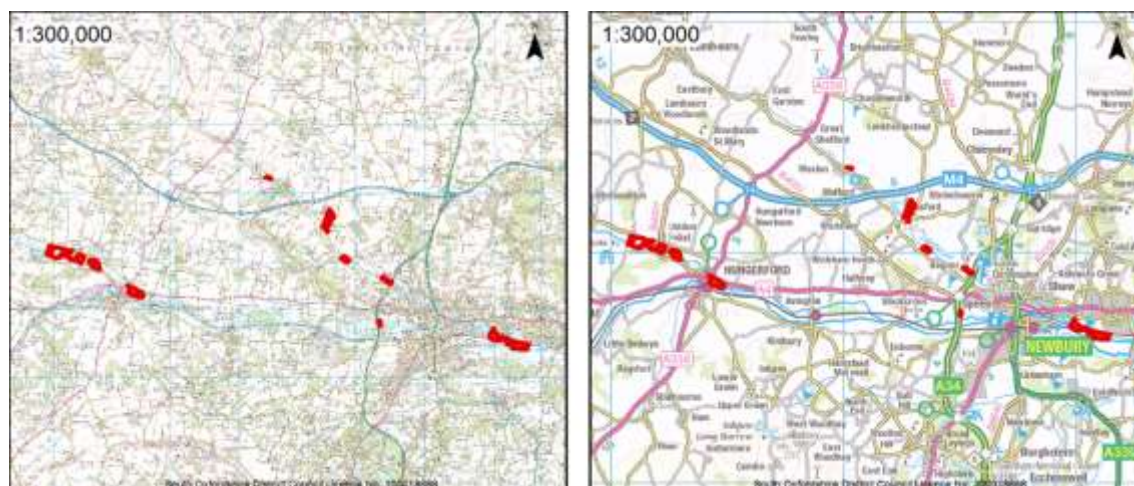
- The **West Berkshire Core Strategy** has allocated 2 new housing sites in and around Newbury where the River Lambourn flows. This may lead to a drawn down on groundwater and potential water quality issues arising from waste water disposal.
- The **West Berkshire Housing Site Allocations DPD** is allocating sites for 10,500 new homes in the district. The preferred Options Consultation (July 2014) identifies Site NEW011, Land Adjacent to Oxford Road which is allocated for 23 houses and adjacent to River Lambourne Special Area of Conservation.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on a SAC, there may be indirect effects on this site such as an increased visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

9. Kennet and Lambourn Floodplain Special Area of Conservation



Site description

The catchment of the River Kennet forms a major stronghold in England for the nationally rare and declining Desmoulin's whorl snail *Vertigo moulinsiana*. This species is listed in the British Red Data Book and is scheduled on Annex II of the European Habitats and Species Directive. It is confined to calcareous river valleys, fens and lake margins. It is thought to be rare throughout Europe and that the British Isles now support a large proportion of the European population.

Protected species

S1016 Desmoulin's whorl snail

Site Status* 69% Favourable; 30% unfavourable recovering; 1% unfavourable no change

Special area of conservation objectives

- 1 Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
- 2 Subject to natural change, maintain or restore:
 - the extent and distribution of natural habitats, and habitats of protected species;
 - the structure and function of habitats, and habitats of protected species
 - the supporting processes on which protected species and their habits rely;
 - the population of protected species; and
 - the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Open, unshaded areas
2. Adequate supply of high quality water

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. Furthermore, the site is not located on a main traffic route. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

- The **West Berkshire Core Strategy** has allocated 2 new housing sites in and around Newbury where the River Lambourn flows. This may lead to a drawn down on groundwater and potential water quality issues arising from waste water disposal.
- The **West Berkshire Housing Site Allocations DPD** is allocating sites for 10,500 new homes in the district. The preferred Options Consultation (July 2014) shows several allocated sites around Newbury and identifies Site NEW011, Land Adjacent to Oxford Road which is allocated for 23 houses and adjacent to

9. Kennet and Lambourn Floodplain Special Area of Conservation

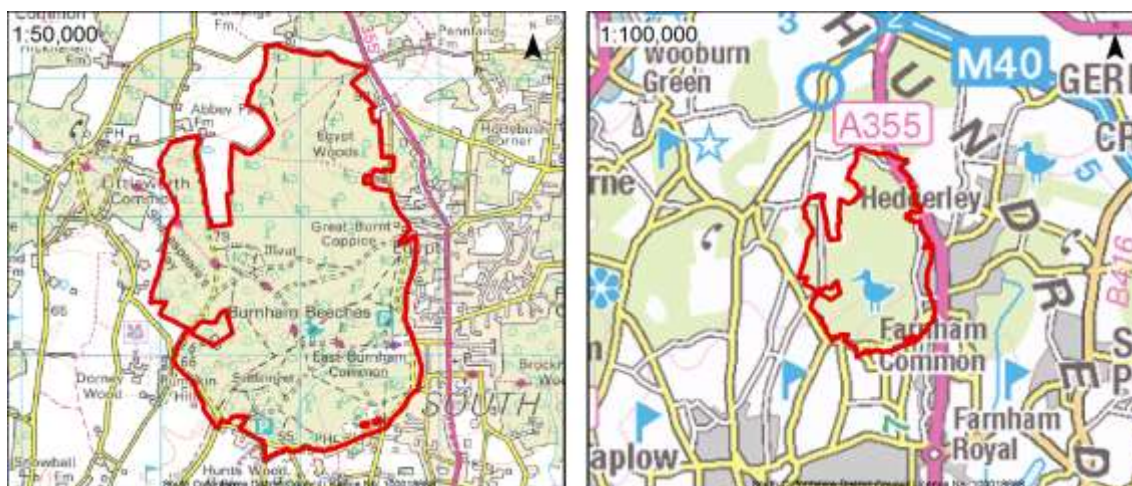
River Lambourne Special Area of Conservation.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on a SAC, there may be indirect effects on this site such as an increased visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

10. Burnham Beeches Special Area of Conservation



Site description

An extensive area of the Burnham Plateau where Thames gravels and underlying Reading Beds give rise to acid soils supporting mature and developing woodland, old coppice, scrub and heath. There are ancient oak and beech pollards of which the latter are a celebrated feature of international renown. Fragments of wet heath and bog, as well as an alder wood and a number of ponds coincide with springs and wet flushes, and with a small stream which in places cuts down to the Chalk producing swallowholes. This complex of habitats, of which none are widely represented in Buckinghamshire

and one (the ancient pollards) is virtually unique, harbours numerous plants, birds and invertebrates of regional importance, as well as several nationally rare species.

Protected species

H9120	Beech forests on acid soils
Site Status*	63% Favourable; 37% unfavourable recovering

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Air quality related to neighbouring extraction site
2. Water supply
3. Growth of secondary woodland

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. Furthermore, the site is not located on a main traffic route. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

- The **South Bucks Core Strategy** identifies the village of Farnham Common, immediately to the east of the SAC, as a secondary service centre, with a capacity of 857 additional dwellings shared with 4 other

10. Burnham Beeches Special Area of Conservation

villages. The core strategy does not make specific allocations but suggests the village will grow between 2006 and 2026.

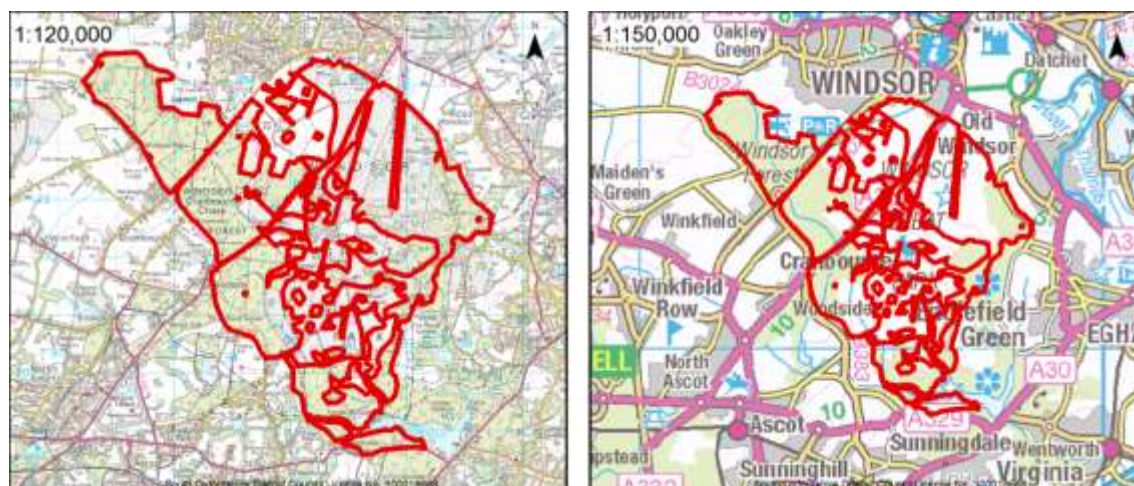
- City of London **Burnham Beeches Local Management Plan 2010-2020** contains objectives for the direct management of the site.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on a SAC, there may be indirect effects on this site such as an increased visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

11. Windsor Forest and Great Park Special Area of Conservation



Site description

A range of habitats are represented, from coniferous and mixed plantations through mature and over-mature broadleaved woodland to wood pasture and parkland. Relicts of the primary forest still survive as ancient oak pollards scattered throughout the Park and Forest. Veteran trees occur with a mosaic of unimproved and semi-improved grassland and grass-heath. Many of these ancient trees are over 500 years old and some reputed to be up to 800 years. Of equal importance, although not reaching such a great age, are numerous over-mature beech trees. Being partially hollow and decayed, the oaks and beech afford habitats for a number of extremely rare and specialised insects, particularly beetles, some of which are unknown elsewhere in the British Isles, as well as nesting sites for several species of hole-nesting birds. Groves of hornbeam are favoured by hawfinches including one of the largest wintering flocks of this species in Britain.

Protected species

H9120	Beech forests on acid soils
H9190	Dry oak-dominated woodland
S1079	Violet click beetle
Site Status*	52% Favourable; 42% unfavourable recovering

Special area of conservation objectives

1	Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
2	Subject to natural change, maintain or restore: <ul style="list-style-type: none"> the extent and distribution of natural habitats, and habitats of protected species; the structure and function of habitats, and habitats of protected species the supporting processes on which protected species and their habits rely; the population of protected species; and the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Continuous supply of old and decaying trees
2. Water quality
3. Maintenance of a high and stable water table
4. Maintenance of an appropriate grazing regime
5. Threat of non-native / invasive species
6. Scrub encroachment

11. Windsor Forest and Great Park Special Area of Conservation

7. Good air quality

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

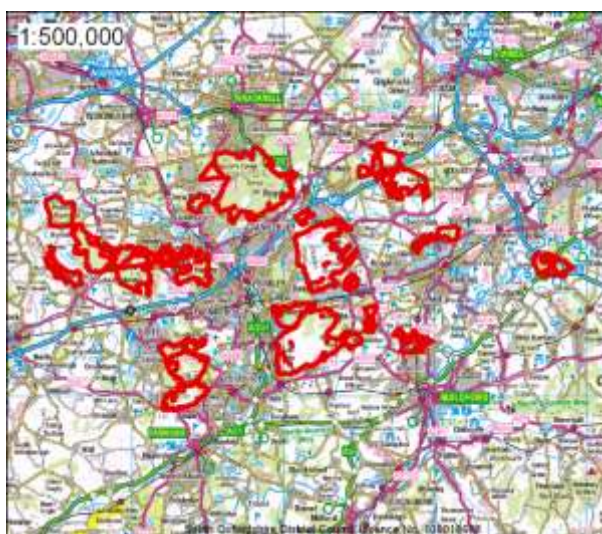
- The **Airport Commission's plans for a new runway**, potentially at Heathrow Airport, could increase noise pollution and decrease air quality on the site. A decision on the preferred option is expected to be reached in 2015.
- The **Royal Borough of Windsor and Maidenhead's emerging Local Plan** is seeking to allocate 750 dwellings nearby the SAC. This may lead to a drawn down on groundwater and potential water quality issues arising from waste water disposal. Additional homes may also result in an increase in road traffic with associated air and noise pollution.

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on a SAC, there may be indirect effects on this site such as an increased visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

12. Thames Basin Heath Special Protection Area



Site description

The site comprises extensive areas of conifer plantation together with a series of shallow acidic ponds within relic wet heathland and a small unimproved grassland area adjacent which provides habitat for the nationally rare small fleabane *Pulicaria vulgaris*.

Protected species

A224 European nightjar (breeding)

A246 Woodlark (breeding)

A302 Dartford warbler (breeding)

Site Status* 99% unfavourable recovering; 1% unfavourable no change

Special protection area objectives

- 1 Avoid the deterioration of the qualifying natural habitats and significant disturbance to them, ensuring the integrity of the site is maintained and makes a full contribution to achieving Favourable Conservation Status for the qualifying features on this site.
- 2 Subject to natural change, maintain or restore:
 - the extent and distribution of natural habitats, and habitats of protected species;
 - the structure and function of habitats, and habitats of protected species
 - the supporting processes on which protected species and their habits rely;
 - the population of protected species; and
 - the distribution of protected species within the site.

Key environmental conditions supporting the site

1. Water quality
2. Maintenance of a high and stable water table
3. Maintenance of an appropriate grazing regime
4. Good air quality (nitrogen impact)

Potential actions for the local plan

The SAC is outside the boundary of the South Oxfordshire Local Plan. The site is not dependent on any water sources that originate or flow downstream from South Oxfordshire. The site may be affected by additional visitors generated from new residential development allocated in the local plan.

Potential impacts from other plans

- The **Airport Commission's plans for a new runway**, potentially at Heathrow Airport, could increase noise pollution and decrease air quality on the site. A decision on the preferred option is expected to be

12. Thames Basin Heath Special Protection Area

reached in 2015.

- The **Bracknell-Forest Site Allocations DPD** has allocated a total of 3,896 dwellings within the authority's boundary. They predict, through their appropriate assessment this will lead to an additional 69,000 visits to the Heaths each year. Associated problems with this include vandalism, fly-tipping, cat and dog predation, fragmentation, dog waste, disturbance, trampling, loss of supporting habitats, noise, lighting, and air pollution.
- **Proposed M4 Junctions 3 to 12:** Smart Motorway, by Highways Agency. Natural England raised concerns at the pre-application stage over potential effects of the proposal on the Thames Basin Heaths Special Protection Area (SPA). Slough Borough Council, West Berkshire Council and Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust confirmed that they will provide relevant information and data

Implications for the site without South Oxfordshire's Local Plan

Without a local plan and up to date five year housing land supply, the council may be in a weak position to refuse development in areas it considers inappropriate. Although applications are unlikely to be granted permission at appeal where there is a significant impact on a SAC, there may be indirect effects on this site such as an increased visitor numbers from new residential developments in South Oxfordshire.

*Site status is an assessment by Natural England of the status of the Site of Special Scientific Interest within the SAC

Appendix 2
Screening matrix for the spatial distribution strategy

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
Benson: 125	<p>Development of 125 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Benson.</p> <p>Most European sites are located far enough from Benson (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Little Wittenham SAC is approximately 4km to the west of Benson so may experience an increase in visitor numbers, potentially resulting in disturbance to the qualifying great crested newt.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burhnam Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>Little Wittenham SAC is managed by the Northmoor Trust as a nature reserve and the areas which are most important to the great crested newts have restricted visitor access.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	<p>No: while it is possible that the development of 125 new homes at Benson could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 125 homes at Benson is included within) and concluded that the development of the housing proposed within the district would have no likely</p>

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
					significant effects on European sites.
Berinsfield: 109	<p>Development of 109 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Berinsfield.</p> <p>Most European sites are located far enough from Berinsfield (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Little Wittenham SAC is approximately 2km to the west of Berinsfield so may experience an increase in visitor numbers, potentially resulting in disturbance to the qualifying great crested newt.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burnham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>Little Wittenham SAC is managed by the Northmoor Trust as a nature reserve and the areas which are most important to the great crested newts have restricted visitor access.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at Little Wittenham SAC.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	<p>No: while it is possible that the development of 109 new homes at Berinsfield could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 109 homes at Berinsfield is included within) and concluded that the development of the housing proposed</p>

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			Heaths SPA and Windsor Forest and Great Park SAC.		within the district would have no likely significant effects on European sites.
Chalgrove: 80	<p>Development of 80 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Chalgrove.</p> <p>Most European sites are located far enough from Chalgrove (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Little Wittenham SAC lies within 5-7 km creating the potential for erosion/trampling and disturbance from increased visitor numbers.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burnham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC,</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	<p>No: while it is possible that the development of 80 new homes at Chalgrove could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 80 homes at Chalgrove is included within) and concluded</p>

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.		that the development of the housing proposed within the district would have no likely significant effects on European sites.
Chinnor: 159	<p>Development of 159 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. As Chinnor is within close proximity of the M40, which bisects Aston Rowant SAC to the south, that European site may be most likely to be affected by increased air pollution from residential development at Chinnor.</p> <p>Most European sites are located far enough from Chinnor (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Chilterns Beechwoods SAC is approximately 1.5km to the west of Chinnor and Aston Rowant SAC is within 5 km so these may experience an increase in visitor numbers.</p> <p>Effects relating to a change in</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	<p>No: while it is possible that the development of 159 new homes at Chinnor could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 159 homes at</p>

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			hydrological regimes or water quality could potentially affect Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.		Chinnor is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Cholsey: 128	<p>Development of 125 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Cholsey.</p> <p>Most European sites are located far enough from Cholsey (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Hartslock Wood SAC and Little Wittenham SAC lie within 5-7 km and may experience an increase in visitor numbers.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burgham</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	<p>No: while it is possible that the development of 128 new homes at Cholsey could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity to any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation</p>

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.		for the district (which the 128 homes at Cholsey is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Crowmarsh Gifford: 48	<p>Development of 48 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Crowmarsh Gifford.</p> <p>Most European sites are located far enough from Crowmarsh Gifford (> 7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Little Wittenham SAC lies within 5 km and may experience an increase in visitor numbers.</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.</p>	No: while it is possible that the development of 48 new homes at Crowmarsh Gifford could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			Effects relating to an increase in hydrological regimes could potentially affect any of the European sites within South Oxfordshire (+17km). Effects relating to a change in hydrological regimes or water quality could potentially affect Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.		effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 48 homes at Crowmarsh Gifford is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Goring: 105	<p>Development of 105 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Goring.</p> <p>Most European sites are located far enough from Goring (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Hartslock Woods SAC is approximately 1.3km to the north of</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring water efficiency measures in</p>	No: while it is possible that the development of 105 new homes at Goring could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition,

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			<p>Goring so may experience an increase in visitor numbers.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burhnam Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	new housing development may provide some mitigation in relation to increased demand for water abstraction.	the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 105 homes at Goring is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Nettlebed: 20	<p>Development of 20 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Nettlebed.</p> <p>All European sites are located far enough from Nettlebed (> 7 km) that a notable increase in new residents visiting the sites is not considered</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local</p>	No: while it is possible that the development of 20 new homes at Nettlebed could result in an increase in vehicle traffic and the associated air pollution, is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			likely. Effects relating to a change in hydrological regimes or water quality could potentially affect Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.	planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.	Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 20 homes at Nettlebed is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Sonning Common: 138	Development of 138 new homes. Increased demand for water abstraction and treatment. Increased vehicle traffic. Increased recreation activities.	Air pollution. Erosion/trampling and disturbance from increased visitor numbers. Changes to hydrological regimes.	Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Sonning Common. All European sites are located far enough from Sonning Common (> 7 km) that a notable increase in new residents visiting the sites is not	The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution. The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites. The implementation of local planning policies requiring	No: while it is possible that the development of 138 new homes at Sonning Common could result in an increase in vehicle traffic and the associated air pollution, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			<p>considered likely.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burgham Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.	likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 138 homes at Sonning Common is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Watlington: 79	<p>Development of 79 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Watlington.</p> <p>Most European sites are located far enough from Watlington (>7 km) that a notable increase in new residents visiting the sites is not considered likely. However, Aston Rowant SAC is</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p> <p>The implementation of local planning policies requiring</p>	No: while it is possible that the development of 79 new homes at Watlington could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			<p>approximately 3km to the north west of Watlington so may experience an increase in visitor numbers.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burhnam Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.	occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 79 homes at Watlington is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Wheatley: 50	<p>Development of 50 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. As Wheatley is within close proximity of the A40, which bisects Oxford Meadows SAC to the west, that European site may be most likely to be affected by increased air pollution from residential development at Chinnor although this is the other side of Oxford and a high	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p>	No: while it is possible that the development of 50 new homes at Wheatley could result in an increase in vehicle traffic and the associated air pollution, it is not located within close proximity of any European sites and the implementation of the identified mitigation measures should further help to avoid significant effects occurring. In addition,

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			<p>proportion of traffic may be dispersed in between.</p> <p>All European sites are located far enough from Wheatley (>7 km) that a notable increase in new residents visiting the sites is not considered likely.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burhnam Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.	the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 50 homes at Wheatley is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.
Woodcote: 73	<p>Development of 73 new homes.</p> <p>Increased demand for water abstraction and treatment.</p> <p>Increased vehicle traffic.</p> <p>Increased recreation activities.</p>	<p>Air pollution.</p> <p>Erosion/trampling and disturbance from increased visitor numbers.</p> <p>Changes to hydrological regimes.</p>	<p>Effects relating to increased air pollution could affect Aston Rowant SAC, Burnham Beeches SAC, Chilterns Beechwoods SAC, Kennet and Lambourn Floodplain SAC, Oxford Meadows SAC, River Lambourn SAC and Windsor Forest and Great Park SAC as those sites are within 200m of the strategic road network. However, none of the strategic roads within 200m of those European sites are directly connected to Woodcote.</p> <p>Effects relating to erosion/trampling or general disturbance from an increase in</p>	<p>The implementation of local planning policies relating to the provision of sustainable transport links may help to reduce the impact of new housing development in relation to increased air pollution.</p> <p>The provision of green infrastructure as part of new housing developments may help to mitigate potential increases in visitor numbers at European sites.</p>	No: while it is possible that the development of 73 new homes at Woodcote could result in an increase in vehicle traffic and the associated air pollution, and an increase in visitor pressure at European sites, Benson is not located within close proximity of any European sites and the implementation of the identified mitigation

Village and housing allocation	Likely activities (operations) to result as a consequence of the provision	Likely effects if provision implemented	European site(s) potentially affected	Potential mitigation measures	Could the provision have likely significant effects on European sites (taking mitigation into account)?
			<p>visitor numbers could affect any of the European sites in/around the district, although most are located far enough from Woodcote that a notable increase in visitors for day to day activities such as dog walking is not considered likely. However, Hartslock Woods SAC is approximately 3km to the south of Woodcote so may experience an increase in visitor numbers.</p> <p>Effects relating to a change in hydrological regimes or water quality could potentially affect Burhnam Beeches SAC, Cothill Fen SAC, Kennett and Lambourn Floodplain SAC, Little Wittenham SAC, Oxford Meadows SAC, River Lambourn SAC, Thames Basin Heaths SPA and Windsor Forest and Great Park SAC.</p>	The implementation of local planning policies requiring water efficiency measures in new housing development may provide some mitigation in relation to increased demand for water abstraction.	measures should further help to avoid significant effects occurring. In addition, the HRA of the Core Strategy assessed the likelihood of significant effects on European sites resulting from the <u>total</u> housing allocation for the district (which the 73 homes at Woodcote is included within) and concluded that the development of the housing proposed within the district would have no likely significant effects on European sites.