



Habitats Regulations Assessment of the Cotswold District Local Plan Partial Update

Scoping Report for the Regulation 18
Consultation

Cotswold District Council

Draft report

Prepared by LUC

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Chapter 1

Introduction

1.1 LUC was commissioned by Cotswold District Council (CDC) to carry out a Habitats Regulations Assessment (HRA) of its Cotswold District Local Plan Partial Update. At this stage of the Partial Plan Update, the HRA Scoping Report contains high level commentary on issues that should be considered within the HRA of the Partial Update. As the Partial Update develops, further iterations of this report will be produced which, where required, will include further assessment.

1.2 The purpose of this report is as follows:

- To identify which European sites have the potential to be affected by the Local Plan Partial Update, including establishing the key information such as threats and vulnerabilities, current pressures and any species and habitat interdependencies; and
- To set out the scope of the HRA screening and subsequent Appropriate Assessment if required.

Context of the Local Plan Partial Update

1.3 The new Local Plan is being prepared as a Partial Update of the Local Plan which was adopted in 2018. The Partial Update will focus on the issues that require modification within the plan period (up to 2031) including addressing changes to the NPPF since 2018. It will allocate more sites for housing, though these will be generally small in scale.

The Requirement to Undertake HRA of Development Plans

1.4 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in 2007 [See reference 1]. The currently applicable version is the Conservation of Habitats and Species Regulations 2017 [See reference 2] (as amended). When preparing the Local Plan, CDC is therefore required by law to carry out an HRA. CDC can commission consultants to undertake HRA work on its behalf and this (the work documented in this report) is then reported to and considered by CDC as the 'competent authorities'. CDC will consider this work and would usually [See reference 3] only progress the Local Plan if it considers that the Plan will not adversely affect the integrity [See reference 4] of any 'European site', as defined below. The requirement for authorities to comply with the Habitats Regulations when preparing a Plan is also noted in the Government's online Planning Practice Guidance (PPG) [See reference 5].

1.5 HRA refers to the assessment of the potential effects of a development plan on one or more sites afforded the highest level of protection in the UK: SPAs and SACs. These were classified under European Union (EU) legislation but, since 1 January 2021, are protected in the UK by the Habitats Regulations 2017 (as amended). Although the EU Directives from which the UK's Habitats Regulations originally derived are no longer binding, the Regulations still make reference to the lists of habitats and species that the sites were designated for, which are listed in annexes to the EU Directives:

- SACs are designated for particular habitat types (specified in Annex 1 of the EU Habitats Directive [See reference 6]) and species (Annex II).
- SPAs are classified for rare and vulnerable birds (Annex I of the EU Birds Directive [See reference 7]), and for regularly occurring migratory species not listed in Annex I.

1.6 The term 'European sites' was previously commonly used in HRA to refer to 'Natura 2000' sites [See reference 8] and Ramsar sites (international

designated under the Ramsar Convention). However, a Government Policy Paper [See reference 9] on changes to the Habitats Regulations 2017 post-Brexit states that:

- Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new 'national site network'.
- The national site network includes existing SACs and SPAs; and new SACs and SPAs designated under these Regulations.
- Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the national site network. Many Ramsar sites overlap with SACs and SPAs and may be designated for the same or different species and habitats.

1.7 Although Ramsar sites do not form part of the new national site network, the Government Policy Paper confirms that all Ramsar sites remain protected in the same way as SACs and SPAs. In LUC's view and unless the Government provides any guidance to the contrary, potential effects on Ramsar sites should continue to form part of the HRA of plans and projects since the requirement for HRA of plans and projects that might adversely affect Ramsar sites forms an essential part of the protection confirmed by the Government Policy Paper. Furthermore, the NPPF [See reference 10] and practice guidance [See reference 11] currently state that competent authorities responsible for carrying out HRA should treat Ramsar sites in the same way as SACs and SPAs.

1.8 The legislative requirement for HRA does not apply to other nationally designated wildlife sites such as Sites of Special Scientific Interest or National Nature Reserves; therefore, for clarity, this report uses the term 'European sites' rather than 'national site network'.

1.9 The overall purpose of an HRA is to conclude whether or not a proposal or policy, or whole development plan would adversely affect the integrity of the site in question. This is judged in terms of the implications of the plan for a site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, and Annex I bird populations for which it has been designated). Significantly, HRA is based

on the precautionary principle. Where uncertainty or doubt remains, an adverse effect should be assumed.

Structure of this report

1.10 This chapter has introduced the requirement to undertake HRA of the Local Plan Partial Update. The remainder of the report is structured as follows:

- **Chapter 2** describes the approach to the HRA. It also describes recent case law, summarises the key issues that will need to be considered during the HRA process and describes the identification of European sites in and around Cotswold District that could be affected by the Partial Plan Update.
- **Chapter 3** describes the European sites in and around Cotswold District and their key vulnerabilities.
- **Chapter 4** sets out the assumptions of the assessment and explores each impact pathway in turn.
- **Chapter 5** describes the next steps that will be carried out in the HRA of the Local Plan Partial Update.

1.11 The information in the main body of the report is supported by the following appendices:

- **Appendix A** presents a map showing the European sites in Cotswold District and within 15km of Cotswold District.
- **Appendix B** sets out detailed information about the European sites that are the focus of the HRA.
- **Appendix C** presents a map of strategic roads within Cotswold District.

Chapter 2

Approach to HRA

2.1 The HRA should be undertaken by the ‘competent authority’, in this case CDC. LUC has been commissioned by CDC to carry out HRA work on its behalf, although this is to be reported to and considered by CDC as the competent authority during the development of the Plan, before finally adopting the Local Plan Partial Update. The HRA also typically requires close working with Natural England as the statutory nature conservation body [See reference 12] to obtain the necessary information, agree the process, outcomes and mitigation proposals. Where a plan or project requires appropriate assessment consultation with Natural England is a statutory requirement.

2.2 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.

Stages of HRA

2.3 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.

Requirements of the Habitats Regulations

2.4 In assessing the effects of a Plan in accordance with Regulation 105 of the Conservation of Habitats and Species Regulations 2017 (as amended), there are potentially two tests to be applied by the competent authority: a ‘Significance Test’, followed if necessary by an Appropriate Assessment which

would inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 105(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, then the considerations proceed to Step 2.
- Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on a European site, either alone or in combination with other plans or projects (the 'Significance Test'). If yes, proceed to Step 3.

[Steps 1 and 2 are undertaken as part of Stage 1: HRA Screening in Table 2.1.]

- Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the European Site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 105(2) to consult Natural England, and optional under Reg. 105(3) to take the opinion of the general public.

[This step is undertaken during Stage 2: Appropriate Assessment shown in Table 2.1]

- Step 4: In accordance with Reg. 105(4), but subject to Reg. 107, give effect to the land use plan only after having ascertained that the plan would not adversely affect the integrity of a European site.

[This step follows Stage 2 where a finding of 'no adverse effect' is concluded. If it cannot be it proceeds to Step 5 as part of Stage 3 of the HRA process]

- Step 5: Under Reg. 107, if Step 4 is unable to rule out adverse effects on the integrity of a European site and no alternative solutions exist then the competent authority may nevertheless agree to the plan or project if it must be carried out for 'imperative reasons of overriding public interest' (IROPI).

[This step is undertaken during Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation shown in Table 2.1]

Typical Stages of HRA

2.5 Table 2.1 summarises the stages and associated tasks and outcomes typically involved in carrying out a full HRA, based on various guidance documents [\[See reference 13\]](#), [\[See reference 14\]](#), [\[See reference 15\]](#).

Table 2.1: Stages of HRA

Stage	Task	Outcome
<p>Stage 1: HRA Screening</p>	<p>Description of the development plan and confirmation that it is not directly connected with or necessary to the management of European sites.</p> <p>Identification of potentially affected European sites and their conservation objectives [See reference 16].</p> <p>Review of other plans and projects.</p> <p>Assessment of Likely Significant Effects of the development plan alone or in combination with other plans and projects, prior to consideration of avoidance or reduction ('mitigation') measures [See reference 17].</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>
<p>Stage 2: Appropriate Assessment (where Stage 1 does not rule out</p>	<p>Information gathering (development plan and European sites [See reference 18]).</p> <p>Impact prediction.</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 or</p>

Stage	Task	Outcome
likely significant effects)	Evaluation of development plan impacts on conservation objectives of European sites. Where impacts are considered to directly or indirectly affect qualifying features of European sites, identify how these effects will be avoided or reduced ('mitigation').	reduced, including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

2.6 It is normally anticipated that an emphasis on Stages 1 and 2 of this 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' (IROPI) are likely to be justified only very occasionally and would involve engagement with the relevant Government department.

Relevant case law changes

2.7 This HRA will be prepared in accordance with relevant case law findings, including most notably the 'People over Wind' and 'Holohan' rulings from the Court of Justice for the European Union (CJEU).

2.8 The People over Wind, Peter Sweetman v Coillte Teoranta (April 2018) judgment ruled that Article 6(3) of the Habitats Directive should be interpreted as meaning that mitigation measures should be assessed as part of an Appropriate Assessment and should not be taken into account at the screening stage. The precise wording of the ruling is as follows:

“Article 6(3)must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site.”

2.9 In light of the above, the HRA screening stage will not rely upon avoidance or mitigation measures to draw conclusions as to whether the Local Plan Partial Update could result in ‘likely significant effects’ on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

2.10 The HRA will also fully consider the Holohan v An Bord Pleanala (November 2018) judgement which stated that:

Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an ‘appropriate assessment’ must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound

and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the ‘appropriate assessment’ must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.”

2.11 LUC will fully consider the potential for effects on species and habitats, including those not listed as qualifying features, to result in secondary effects upon the qualifying features of European sites, including the potential for complex interactions and dependencies. In addition, the potential for offsite impacts, such as through impacts to functionally linked habitat, and or species and habitats located beyond the boundaries of European site, but which may be important in supporting the ecological processes of the qualifying features, has also been fully considered in this HRA.

2.12 In addition to this, the HRA will take into consideration the ‘Wealden’ judgement and the ‘Dutch Nitrogen Case’ judgements from the Court of Justice for the European Union.

2.13 *Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* (2017) ruled that it was not appropriate to scope out the need for a detailed assessment for an individual plan or project based on the annual average daily traffic (AADT) figures detailed in the Design Manual for Roads and Bridges or the critical loads used by DEFRA or Environment Agency without considering the in-combination impacts with other plans and projects.

2.14 In light of this judgement, the HRA will therefore consider traffic growth based on the effects of development provided for by the Local Plan Partial

Update in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

2.15 The 2018 ‘Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu (Dutch Nitrogen)’ judgement stated that:

“May the positive effects of the autonomous decrease in the nitrogen deposition ... be taken into account in the appropriate assessment..., it is important that the autonomous decrease in the nitrogen deposition be monitored and, if it transpires that the decrease is less favourable than had been assumed in the appropriate assessment, that adjustments, if required, be made.”

2.16 The Dutch Nitrogen judgement also states that according to previous case law:

2.17 *“...it is only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm to the integrity of the site concerned, by guaranteeing beyond all reasonable doubt that the plan or project at issue will not adversely affect the integrity of that site, that such a measure may be taken into consideration in the ‘appropriate assessment’ within the meaning of Article 6(3) of the Habitats Directive”.*

2.18 The HRA of the Local Plan Partial Update will therefore only consider the existence of conservation and/or preventative measures if the expected benefits of those measures are certain at the time of the assessment. The HRA will also ensure that if a threshold approach is applied it will consider the risk of significant effects being produced even if below the threshold values to ensure that there is no adverse effect on integrity of the European sites.

Screening methodology

2.19 HRA Screening of the Local Plan Partial Update will be undertaken in line with current available guidance and seek to meet the requirements of the Habitats Regulations.

2.20 The purpose of the screening stage is to:

- Identify all aspects of the plan which would have no effect on a European site, so that that they can be eliminated from further consideration in respect of this and other plans;
- Identify all aspects of the plan which would not be likely to have a significant effect on a European site (i.e. would have some effect, because of links/connectivity, but which are not significant), either alone or in combination with other aspects of the same plan or other plans or projects, which therefore do not require 'appropriate assessment'; and
- Identify those aspects of the plan where it is not possible to rule out the risk of significant effects on a European site, either alone or in combination with other plans or projects. This provides a clear scope for the parts of the plan that will require appropriate assessment.

Identification of European sites which may be affected by the Local Plan Partial Update

2.21 To initiate the search of European sites that could potentially be affected by the Local Plan Partial Update, it is established practice in HRAs to consider European sites within the local planning authority area covered by a Plan, and also within a buffer distance from the boundary of the Plan area.

2.22 A distance of 15km from the CDC boundary has been used as a starting point to identify European sites that could be affected by impacts relating to the Local Plan Partial Update. The use of this distance is common practice in HRAs

of English Local Plans. In addition to this, consideration has also been given to European sites potentially connected to the plan area beyond this distance, for example through hydrological pathways or recreational visits by residents of Cotswold District.

Potential impacts of the Local Plan Partial Update on European sites

2.23 In our experience of HRA of Local Plans, and based on previous statutory consultee comments on HRAs undertaken elsewhere, the type of development (and related activities) that are permitted by Local Plans have the potential to result in the following broad types of impacts that could affect European sites:

- **Physical loss of or damage to habitats** e.g. from development or activities within the European sites themselves or at functionally-linked sites;
- **Non-physical disturbance** e.g. noise, vibration or light from construction or development in close proximity to sensitive species;
- **Non-toxic contamination** e.g. from creation of dust which can smother terrestrial habitats, affect turbidity of aquatic habitats and contribute to nutrient enrichment;
- **Recreation pressure** e.g. dog walking, cycling, trampling, littering, fire, or predation by pets;
- **Air pollution** e.g. from changes in traffic volumes on roads close to sensitive habitats; and
- **Changes in water quality or quantity** e.g. changes in flow caused by abstraction/discharge, accidental pollution, or increase nutrient loading from sewage treatment.

2.24 Further consideration of the types of impact that could be relevant to the Local Plan Partial Update and possible impact pathways to European sites is provided in **Chapter 4**.

Assessment of 'likely significant effect'

2.25 As required under Regulation 105 of The Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), an assessment will be undertaken of the 'likely significant effects' of the policy approaches set out within the draft Local Plan Partial Update. The assessment will be undertaken to identify which policies would be likely to have a significant effect on European sites in Cotswold District (+15km). This assessment will need to be repeated with each HRA iteration of the Local Plan Partial Update.

2.26 A risk-based approach involving the application of the precautionary principle will be adopted in the assessment, such that a conclusion of 'no significant effect' will only be reached where it is considered very unlikely, based on current knowledge and the information available, that a proposal in the Local Plan Partial Update would have a significant effect on the integrity of a European site.

Interpretation of 'likely significant effect'

2.27 Relevant case law helps to interpret when effects should be considered as being likely to result in a significant effect, when carrying out HRA of a Plan.

2.28 In the Waddenzee case [See reference 19], the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive (translated into Reg. 102 in the Habitats Regulations), including that:

- An effect should be considered 'likely', "if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site" (para 44).
- An effect should be considered 'significant', "if it undermines the conservation objectives" (para 48).

- Where a plan or project has an effect on a site “but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned” (para 47).

2.29 An opinion delivered to the Court of Justice of the European Union [See [reference 20](#)] commented that:

“The requirement that an effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.”

2.30 This opinion (the ‘Sweetman’ case) therefore allows for the authorisation of plans and projects whose possible effects, alone or in combination, can be considered ‘trivial’ or de minimis; referring to such cases as those “which have no appreciable effect on the site”. In practice such effects could be screened out as having no likely significant effect; they would be ‘insignificant’.

In-combination effects

2.31 Regulation 105 of the Habitats Regulations 2017 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, it will be necessary to consider whether any impacts identified from the Local Plan Partial Update may combine with other plans or projects to give rise to significant effects in-combination.

2.32 Where the Local Plan Partial Update is likely to have an effect on its own e.g. due to water pollution (due to impact pathways being present), but it is not likely to be significant, the in-combination assessment at Screening stage will need to determine whether there may also be the same types of effect from

other plans or projects that could combine with the Local Plan Partial Update to produce a significant effect. If so, this likely significant effect (e.g. water pollution) arising from the Local Plan Partial Update in combination with other plans or projects, would then need to be considered through the Appropriate Assessment stage to determine if water pollution would have an adverse effect on integrity of the relevant European site. Where the screening assessment has concluded that there is no impact pathway between development proposed in the Local Plan Partial Update and the conditions necessary to maintain qualifying features of a European site, then there will be no in-combination effects to assess at the Screening or Appropriate Assessment stage. This approach accords with recent guidance on HRA [\[See reference 21\]](#).

2.33 If impact pathways are found to exist for a particular effect but it is not likely to be significant from the Local Plan Partial Update alone, the in-combination assessment will identify which other plans and programmes could result in the same impact on the same European site. This will focus on planned growth (including housing, employment, transport, minerals and waste) around the affected site, or along the impact corridor, for example, if impacts could arise as a result of changes to a waterway, then planned growth in local authorities along that waterway will be considered.

2.34 The potential for in-combination impacts will therefore focus on plans prepared by local authorities that overlap with European sites that are within the scope of this HRA. The findings of any associated HRA work for those plans will be reviewed where available. Where relevant, any strategic projects in the area that could have in-combination effects with the Local Plan Partial Update will also be identified and reviewed.

2.35 The online HRA Handbook suggests the following plans and projects may be relevant to consider as part of the in-combination assessment:

- Applications lodged but not yet determined, including refusals subject to an outstanding appeal or legal challenge;
- Projects subject to periodic review e.g. annual licences, during the time that their renewal is under consideration;

- Projects authorised but not yet started;
- Projects started but not yet completed;
- Known projects that do not require external authorisation;
- Proposals in adopted plans; and
- Proposals in draft plans formally published or submitted for final consultation, examination or adoption.

2.36 The need for in-combination assessment also arises at the Appropriate Assessment stage, as discussed in the Appropriate Assessment section below.

Screening Assessment

2.37 Each Local Plan Partial Update policy (and option or site allocation, where relevant) will be considered, alone and in-combination with other policies, site allocations and/or plans from neighbouring authorities.

2.38 A risk-based approach involving the application of the precautionary principle will be adopted, such that a conclusion of ‘no significant effect’ will only be reached where it is considered unlikely, based on current knowledge and the information available, that a Local Plan Partial Update policy would have a significant effect on the integrity of a European site.

2.39 For some types of impacts, the potential for likely significant effects can be determined on a proximity basis, using GIS data to determine the proximity of potential development locations to the European sites that are the subject of the assessment. However, there are many uncertainties associated with using set distances as there are very few standards available as a guide to how far impacts will travel. Therefore, where assumptions have been made, these are set out in **Chapter 4** Assessment Assumptions; these will be reviewed as the HRA progresses.

2.40 A screening matrix will be prepared to assess which draft policies (and options or site allocations) are likely to have a significant effect on European sites. The screening matrix will be appended to the HRA report and will be summarised in the main body of the report. The proposed structure of the screening matrix is shown in **Table 2.2** below.

Table 2.2: Proposed Structure of the HRA Screening Document

Policy/option /site allocation	Likely activities (operations) to result as a consequence	Potential effects if implemented	Does the policy / option / site allocation need to be scoped into the Appropriate Assessment?

2.41 A ‘traffic light’ approach will be used in the screening matrix to record the likely impacts of each policy (and option or site allocation) on European sites and their qualifying habitats and species, using the colour categories shown below.

Purple	There are likely to be significant effects (will require Appropriate Assessment)
Yellow	There may be significant effects, but this is currently uncertain (will require Appropriate Assessment).
Green	There are unlikely to be significant effects (will not require Appropriate Assessment).

2.42 The Appropriate Assessment will then focus on those policies / options / site allocations that have been scoped in.

Appropriate Assessment methodology

2.43 Following the screening stage, if likely significant effects on European sites are unable to be ruled out, the plan-making authority is required under Regulation 105 of the Habitats Regulations 2017 to make an ‘Appropriate Assessment’ of the implications of the plan for European sites, in view of their conservation objectives. European Commission Guidance 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.

Assessing the effects on site integrity

2.44 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.

2.45 A conclusion needs to be reached as to whether or not the Local Plan Partial Update would adversely affect the integrity of a European site. As stated in the European Commission Guidance, assessing the effects on the site(s) integrity involves considering whether the predicted impacts of the Local Plan Partial Update policies (either alone or in combination) have the potential to:

- Cause delays to the achievement of conservation objectives for the site;
- Interrupt progress towards the achievement of conservation objectives for the site;
- Disrupt those 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;
- Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem;
- Change the dynamics of relationships that define the structure or function of the site (e.g. relationships between soil and water, or animals and plants);
- Interfere with anticipated natural changes to the site;
- Reduce the extent of key habitats or the population of key species;
- Reduce the diversity of the site;
- Result in disturbance that could affect the population, density or balance between key species;
- Result in fragmentation; or
- Result in the loss of key features.

2.46 The conservation objectives for each European site (**Appendix B**) are generally to maintain the qualifying features in favourable condition. The Site Improvement Plans for each European site provide a high level overview of the issues (both current and predicted) affecting the condition of the European features on the site(s) and outline the priority measures required to improve the condition of the features. These have been drawn on to help to understand what is needed to maintain the integrity of the European sites.

2.47 For each European site where an uncertain or likely significant effect is identified in relation to the Local Plan Partial Update, the potential impacts will be set out and judgements made (based on the information available) regarding whether the impact will have an adverse effect on the integrity of the site. Consideration will be given to the potential for mitigation measures to be implemented that could reduce the likelihood or severity of the potential impacts such that there would not be an adverse effect on the integrity of the site.

Chapter 3

European Sites In and Around Cotswold District

3.1 Geographical Information Systems (GIS) data have been used to map the locations and boundaries of European sites in and within 15km of the CDC boundary (**Appendix A**), using publicly available data from Natural England. All European sites lying partially or wholly within 15km have been included, along with any further-distant European sites that could be significantly affected by development within Cotswold District. A distance of 15km is generally considered appropriate for identifying potential impact pathways, but European Sites located beyond this distance have also been considered where they share functional ecological connectivity to impact sources associated with the Local Plan Partial Update area (see **paragraph 2.11**), for example via river systems.

3.2 European sites scoped in which are within Cotswold District or within 15km of Cotswold District boundary are listed below in **Table 3.1** below. Detailed information about each site is provided in **Appendix B**.

Table 3.1: European sites in Cotswold District and within 15km of Cotswold District

European Site	Closest Distance / Direction from Cotswold District
Special Areas of Conservation (SACs)	
Cotswold Beechwoods	A small area of the site is within Cotswold District
North Meadow and Clattinger Farm	Adjacent / south
Rodborough Common	2.7km / west

European Site	Closest Distance / Direction from Cotswold District
Dixton Wood	7.1km / west
Bredon Hill	10.1km / west
Severn Estuary	10.7km / west
Special Protected Areas (SPAs)	
Severn Estuary	10.4km / west
Ramsar Sites	
Severn Estuary	10.4km / west

3.3 European sites beyond 15km of the Cotswold District Boundary but which have been scoped in as there are potential pathways by which they could be impacted as a result of the Cotswold Local Plan Partial Update are listed in **Table 3.2** below. Detailed information about each site is provided in **Appendix B**.

Table 3.2: European sites beyond 15km of the Cotswold District Boundary but have potential impact pathways

European Site	Closest Distance / Direction from Cotswold District	Potential Pathways
Special Areas of Conservation (SACs)		
Oxford Meadows	23.9km / east	Hydrological connectivity via River Evenlode and River Thames

3.4 The attributes of these European sites which contribute to and define their integrity have been described within **Appendix B**. In doing so, reference was made to the Natura 2000 standard data forms published on the JNCC website, Natural England’s Site Improvement Plans and Conservation Objectives

Chapter 3 European Sites In and Around Cotswold District

Supplementary Advice. This analysis enables European site interest features to be identified, along with the features of each site which determine site integrity and the specific sensitivities of the site. This information will allow an analysis of how the potential impacts of the Local Plan Partial Update may affect the integrity of each site.

Chapter 4

Assessment Assumptions

4.1 For many of the broad impacts that could arise from the Local Plan Partial Update, the potential for significant effects will be determined by location, using GIS data to determine the proximity of potential development locations to the European sites that are the subject of the assessment.

4.2 However, there are many uncertainties associated with using set distances as there are very few standards available as a guide to how far impacts will travel. Therefore, a number of assumptions will be applied in relation to assessing the potential effects on European sites that may result from the Local Plan Partial Update, as described below.

4.3 Other types of potential effect may be identified during the HRA process. If so, any assumptions that the assessment of those effects is based on will be set out in the HRA.

Physical Loss of Habitat

4.4 Any development resulting from the Local Plan Partial Update would take place within the District. Therefore, only European sites within the District's boundary could be affected through physical damage or loss of habitat from within the European site's boundaries. Cotswold Beechwoods SAC is within the District boundary and therefore has the potential to be affected by physical damage and/or loss from development.

Physical Loss of Habitat - Functionally Linked Habitat

4.5 Habitat loss from development in areas outside of the European site boundaries may also result in likely significant effects where that habitat contributes towards maintaining the interest feature for which the European site is designated. This includes land which may provide offsite movement corridors or feeding and sheltering habitat for mobile species such as bats, birds and fish (usually referred to as 'functionally linked' habitat).

4.6 European sites which have been scoped out of the assessment as they are situated outside of the CDC boundary and do not support qualifying features susceptible to offsite habitat loss include:

- North Meadow and Clattinger Farm SAC;
- Rodborough Common SAC; and
- Oxford Meadows SAC.

Functionally Linked Habitat - Violet click-beetle

4.7 Dixon Wood SAC and Bredon Hill SAC are located 7.11 km and 10.14 km from the CDC boundary respectively. Both SAC's are designated for supporting violet click-beetle *Limoniscus violaceus*. Habitats located outside of these European sites may also contribute to maintaining the population of these species.

Whilst research into the violet click-beetle is minimal, the dispersal abilities of this species is considered to be limited [See reference 22]. Given the distance of the SAC's from the CDC boundary and the limited dispersal ability of this species, Dixon Wood SAC and Bredon Hill SAC have been scoped out from further consideration at the screening stage.

Functionally Linked Habitat - Birds

4.8 Severn Estuary SPA and Ramsar is designated for supporting Bewick's swan *Cygnus columbianus*, gadwall *Anas strepera*, greater white-fronted goose *Anser albifrons*, dunlin *Calidris alpina*, shelduck *Tadorna tadorna*, redshank *Tringa totanus* and the assemblage of waterfowl.

4.9 Natural England is currently developing the Severn & Avon Vales' Functionally Linked Land (FLL) map which will model likely foraging and supporting areas around Severn Estuary SPA and Ramsar [See reference 23]. An extensive study reported in 2020 [See reference 23] presented the data which will inform the Natural England FLL modelling and mapping process.

4.10 The study identified numerous sites across the Cotswold District which exceeded thresholds of significance for populations of qualifying birds of Severn Estuary SPA (>1% of Severn Estuary SPA population). Specifically, Bewick's swan, gadwall and waterfowl species were recorded above the threshold of significance within the district. The waterfowl species pochard *Aythya ferina* and teal *Anas crecca* were proven to have functional linkages between Severn Estuary SPA and lakes at the Cotswold Water Park in the south of district. The study also suggested, but did not prove, a functional linkage between Severn Estuary SPA and the Cotswold Water Park for Bewick's swan.

4.11 The habitat preferences for qualifying bird species of Severn Estuary SPA and Ramsar includes farmland, grassland, lakes, ponds, wetlands and rivers. Therefore, functionally linked habitat for qualifying bird species of Severn Estuary SPA and Ramsar is likely to comprise these habitats.

4.12 Given the functional linkage between Severn Estuary SPA and the Cotswold District, Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage to determine whether the plan will result in likely significant effects on the qualifying bird species as a result of the loss of functionally linked land.

Functionally Linked Habitat - Fish

4.13 The Severn Estuary SAC and Ramsar is designated for supporting Atlantic salmon *Salmo salar*, sea trout *Salmon trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *Alosa fallax* and eel *Anguilla Anguilla*.

4.14 All of these species are migratory and therefore have the potential to be dependent upon watercourses located outside the boundaries of the SAC and Ramsar but with functional hydrological connectivity.

4.15 Given that Severn Estuary SAC and Ramsar is hydrologically connected to the Cotswold District boundary, both European sites have been scoped in for further assessment at the screening stage.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to the physical loss of habitat and/or functionally linked habitat:

- Cotswold Beechwoods SAC; and
- Severn Estuary SAC, SPA and Ramsar.

Non-Physical Disturbance

4.16 Noise and vibration effects, e.g. during the construction of new housing or other 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 some nocturnal bird

species, and therefore have an adverse effect on the integrity of European sites where bats or nocturnal birds are a qualifying feature.

4.17 It has been assumed (on a precautionary basis and based on our experience of previous HRAs and consultation with Natural England) that the effects of noise, vibration and light pollution are capable of causing an adverse effect if development takes place within 500 m of a European site (or functionally linked habitat) with qualifying features sensitive to these disturbances.

4.18 All European sites are located over 500 m from the District boundary at the closest point and/or do not support species likely to be significantly affected as a result of noise, vibration and light pollution.

Non-Physical Disturbance – Functionally Linked Habitat

4.19 Non-physical disturbance may also adversely affect qualifying species at functionally linked habitat. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Cotswold District Boundary:

- Bird species of Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar.

4.20 Given that certain qualifying bird species may use habitats within the Cotswold District and the sensitivity of some birds to noise and vibration, the Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage for qualifying bird species.

4.21 Migratory fish species are unlikely to be significantly affected as a result of noise, vibration and light pollution resulting from the Local Plan. Therefore,

Severn Estuary SAC and Ramsar have been scoped out of further assessment for migratory fish species.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to non-physical disturbance at functionally linked habitat:

- Severn Estuary SPA and Ramsar (birds only) .

Non-Toxic Contamination

4.22 Non-toxic contamination can include the creation of dust which can smother habitats preventing natural processes, and may also lead to effects associated with increased sediment and dust which can potentially affect the turbidity of aquatic habitats, and can also contribute to nutrient enrichment which can lead to changes in the rate of vegetative succession and habitat composition.

4.23 The effects of non-toxic contamination are most likely to be significant if development takes place within 500m of a European site with qualifying features sensitive to these disturbances, such as riparian and wetland habitats, or sites designated for habitats and plant species. This is the distance that, in our experience, provides a robust assessment of effects in plan-level HRA and meets with the agreement of Natural England.

4.24 Therefore, all European Sites within the CDC boundary and within 500m of the District boundary have been scoped into the HRA. This includes Cotswold Beechwoods SAC and North Meadow and Clattinger Farm SAC.

Non-Toxic Contamination – Functionally Linked Habitat

4.25 Non-toxic contamination may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Cotswold District Boundary:

- Bird species of Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar.

4.26 Given the sensitivity of these habitats to non-toxic contamination, Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage for qualifying bird species.

4.27 Given the sensitivity of riparian habitats to non-toxic contamination, Severn Estuary SAC and Ramsar have also been scoped in for further assessment at the screening stage.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to non-toxic contamination:

- Cotswold Beechwoods SAC;
- North Meadow and Clattinger Farm SAC; and
- Severn Estuary SAC, SPA and Ramsar.

Air Pollution

4.28 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 (N) availability that can then affect plant health, productivity and species composition. All of the sites have plant and/or water habitats or species as their qualifying feature.

4.29 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. The HRA will refer to the UK Air Pollution Information System [See reference 24] to determine whether concentrations of NO_x at the European sites are currently exceeding critical loads or not.

4.30 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) Document LA105: Air Quality [See reference 25] (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.

4.31 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied 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.

4.32 In line with the Wealden judgment [[See reference 26](#)], Natural England now expects to see in-combination air pollution effects assessed. The implication of the judgment is that, where the road traffic effects of other plans or projects are known or can be reasonably estimated (including those of adopted plans or consented projects), then these should be included in road traffic modelling by the local authority whose local plan or project is being assessed. The screening criteria of 1,000 AADT should then be applied to the traffic flows of the plans in combination.

4.33 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 etc.). As such, where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

4.34 Strategic roads within the CDC boundary and a 15 km buffer include the motorways M4, M5 and 42 ‘A’ roads, which are highlighted in **Appendix C**. European sites which are situated within 200 m of a strategic road and their corresponding SSSI units condition are provided in **Table 4.1** below.

Table 4.1: European sites which are situated within 200 m of a strategic road and their corresponding SSSI units condition

European Site	Strategic Road	SSSI Unit	SSSI Unit Condition
Cotswold Beechwoods SAC	A46	12	Favourable

European Site	Strategic Road	SSSI Unit	SSSI Unit Condition
		13	Favourable
		14	Favourable
		15	Favourable
North Meadow and Clattinger Farm SAC	A419	1	Favourable
Rodborough Common SAC	A46	1	Favourable

Traffic Data

4.35 Traffic data provided by CDC for the European sites within 200m of a strategic road is presented in **Table 4.2** below. The data shows that AADT is likely to exceed 1000 from background increases alone for North Meadow and Clattinger Farm SAC.

Table 4.2: AADT data provided by CDC for the European sites within 200m of a strategic road.

European Site	Road	Direction	2018 Baseline	Core 2026 Do-Minimum scenario	AADT change
Cotswold Beechwoods SAC	A46	-	6251	-	-
North Meadow and Clattinger Farm SAC	A419	North bound	20,234	22,724	+ 2,490
		South bound	21,738	24,688	+ 2,490
Rodborough Common SAC	A46	-	15,409	-	-

Air Pollution - Functionally Linked Habitat

4.36 Air pollution may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Cotswold District Boundary:

- Bird species of Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar.

4.37 Given qualifying bird species may use aquatic habitats within the Cotswold District, the sensitivity of aquatic habitats to air pollution and that numerous aquatic habitats are within 200m of a strategic road, Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage for qualifying bird species.

4.38 Given qualifying migratory fish species may use tributaries of the River Severn within the Cotswold District, the sensitivity of riparian habitats to air pollution and that many of the tributaries are within 200m of a strategic road, Severn Estuary SAC and Ramsar has also been scoped in for further assessment at the screening stage.

4.39 All of the other European sites are situated over 200m from strategic roads and were therefore scoped out.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to air pollution:

- Cotswold Beechwoods SAC;
- North Meadow and Clattinger Farm SAC; and
- Rodborough Common SAC.

- Severn Estuary SAC, SPA and Ramsar.

Recreation Pressure

4.40 Recreational activities and human presence can result in significant effects on European sites as a result of erosion and trampling, associated impacts such as fire and vandalism or disturbance to sensitive features, such as birds through both terrestrial and water-based forms of recreation.

4.41 The Local Plan Partial Update will result in housing growth and associated population increase within the CDC boundary. Where increases in population are likely to result in significant increases in recreation at a European site, either alone or in-combination, the potential for likely significant effects will require assessment. At this stage, there is no definitive figure of how many homes the Local Plan Partial Update will make provision for over the plan period.

4.42 European sites with qualifying bird species are likely to be particularly susceptible to recreational disturbances from walking, dog walking, angling, illegal use of off-road vehicles and motorbikes, wildfowling, and water sports. An increase in recreational pressure from development therefore has the potential to disturb bird populations of SPA and Ramsar sites as a result of both terrestrial and water-based recreation.

4.43 In addition, recreation can physically damage habitat as a result of trampling and also through erosion associated with boat wash and terrestrial activities such as use of vehicles.

4.44 Each European site will typically have a 'Zone of Influence' (ZOI) within which increases in population would be expected to result in likely significant effects. ZOIs are usually established following targeted visitor surveys and the findings are therefore typically specific to each European site (and often to specific areas within a European site). The findings are likely to be influenced by a number of complex and interacting factors and therefore it is not always

appropriate to apply a generic or non-specific ZOI to a European Site. This is particularly the case in relation to coastal European sites, which have the potential to draw large number of visitors from areas much further afield.

4.45 In contrast to coastal European sites, the ZOI for non-coastal European sites are typically less variable, with visitors travelling from areas more local to a site. Although these sites are unique in their own right, they tend not have the same draw as coastal sites and with recreational activities more easily managed and directed to alternative greenspace in the area. Using a precautionary approach and based on the findings of the Monitor of Engagement with the Natural Environment (MENE) survey [\[See reference 27\]](#), a ZOI of 8km has been applied to all non-coastal European sites where alternative ZOI is not available. The 8km ZOI derived from the MENE data relates to the distance of ‘3 to 5 miles’ that 75% of visitors from Cotswold District travel to reach a natural environment. ZOIs are typically based on the distance that 75% of visitors travel from; therefore, 8km is deemed appropriate to use as a precautionary ZOI in this assessment.

4.46 The following European Sites were scoped out of further assessment:

- Bredon Hill SAC [\[See reference 28\]](#) – not identified as sensitive to recreation pressure within the SAC's Site Improvement Plan or Supplementary Advice for Conservation Objectives.

4.47 Existing visitor survey work available for all other European sites within is summarised in **Table 4.3** below.

Table 4.3: Zone of Influence (ZOI) derived from existing visitor survey work

European Site	ZOI
Cotswold Beechwoods SAC	15.4km [See reference 29]
North Meadow and Clattinger Farm SAC	8.0km [See reference 30]

European Site	ZOI
Rodborough Common SAC	3.8km [See reference 31]
Dixton Wood SAC	8.0km*
Oxford Meadows SAC	8.0km*
Severn Estuary SAC, SPA and Ramsar	7.7km [See reference 32]

*Assumed 8.0km as detailed in paragraph 4.45.

4.48 A review of the European sites and their recreational ZOI determined that the following European sites do not have a recreational ZOI that extends into the CDC boundary and can therefore be scoped out of further assessment:

- Bredon Hill SAC;
- Oxford Meadows SAC; and
- Severn Estuary SAC, SPA and Ramsar.

Recreational Disturbance – Functionally Linked Habitat

4.49 Recreational disturbance may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Cotswold District Boundary:

- Bird species of Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar.

4.50 Given qualifying bird species may use aquatic habitats within the Cotswold District, the draw of aquatic habitats to visitors and the sensitivity of birds to

recreational disturbance, Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage for qualifying bird species.

4.51 Given qualifying migratory fish species may use tributaries of the River Severn within the Cotswold District and the sensitivity of riparian habitats to recreational impacts, the Severn Estuary SAC and Ramsar been scoped in for further assessment at the screening stage, on a precautionary basis, for migratory fish.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to recreational pressure:

- Cotswold Beechwoods SAC;
- North Meadow and Clattinger Farm SAC;
- Rodborough Common SAC;
- Dixon Wood SAC; and
- Severn Estuary SAC, SPA and Ramsar.

Water Quantity and Quality

4.52 All of the European sites have qualifying features that have potential to be sensitive to changes in water quantity or quality.

4.53 European sites with the potential to be affected by changes in water quantity or quality are likely to be sites that lie within the CDC boundary or those that are hydrologically connected to the CDC boundary and therefore potentially effected by areas of development to be set out within the Local Plan Partial Plan Update.

4.54 Of the European Sites outside of the CDC boundary the following are considered to be hydrological connected to the district:

- North Meadow and Clattinger Farm SAC (via Cerney Wick Brook and River Churn);
- Rodborough Common SAC (via River Frome and Nailsworth Stream);
- Oxford Meadows SAC (via River Evenlode and River Thames); and
- Severn Estuary SAC, SPA and Ramsar (via River Frome, River Chelt, Ozleworth Brook, Nailsworth Stream, Bretforton Brook and Broadway-Badsey Brook).

4.55 Due to the lack of hydrological connectivity between the following European sites and the CDC boundary, the following sites were scoped out of further assessment:

- Dixton Wood SAC; and
- Bredon Hill SAC.

Water Quantity and Quality - Functionally Linked Habitat

4.56 Water quantity and quality changes may also adversely affect qualifying features at functionally linked habitats. It was established in the **Physical Loss of Habitat - Functionally Linked Habitat** section above that the following qualifying species may use functionally linked habitat within the Cotswold District Boundary:

- Bird species of Severn Estuary SPA and Ramsar.
- Migratory fish species of Severn Estuary SAC and Ramsar.

4.57 Given qualifying bird species may use aquatic habitats within the Cotswold District and the sensitivity of aquatic habitats to water quantity and quality,

Severn Estuary SPA and Ramsar have been scoped in for further assessment at the screening stage for qualifying bird species.

4.58 Given qualifying migratory fish species may use tributaries of the River Severn within the Cotswold District and the sensitivity of riparian habitats and the sensitivity of aquatic habitats to water quantity and quality, Severn Estuary SAC and Ramsar has also been scoped in for further assessment at the screening stage.

Therefore, the following European sites have been scoped in for assessment at the screening stage in relation to changes in water quality or quantity:

- Cotswold Beechwoods SAC;
- North Meadow and Clattinger Farm SAC;
- Rodborough Common SAC;
- Oxford Meadows SAC; and
- Severn Estuary SAC, SPA and Ramsar.

Summary of Screening Assumptions

4.59 The outcome of the scoping assessment and which European Sites require further assessment at the screening stage in relation to each broad impact type is summarised in **Table 4.4** below.

Table 4.4: Summary of screening assumptions

European site	Physical damage / loss of habitat	Non-physical disturbance	Non-toxic contamination	Air pollution	Recreation and urban impacts	Water quantity and quality
Cotswold Beechwoods SAC	Scoped in*	Scoped out	Scoped in	Scoped in	Scoped in	Scoped in
North Meadow and Clattinger Farm SAC	Scoped out	Scoped out	Scoped in	Scoped in	Scoped in	Scoped in
Rodborough Common SAC	Scoped out	Scoped out	Scoped out	Scoped in	Scoped in	Scoped in
Dixton Wood SAC	Scoped out	Scoped out	Scoped out	Scoped out	Scoped in	Scoped out
Bredon Hill SAC	Scoped out	Scoped out	Scoped out	Scoped out	Scoped out	Scoped out
Oxford Meadows SAC	Scoped out	Scoped out	Scoped out	Scoped out	Scoped out	Scoped in
Severn Estuary SAC	Scoped in^	Scoped out	Scoped in^	Scoped in^	Scoped in^	Scoped in^
Severn Estuary SPA	Scoped in^	Scoped in^	Scoped in^	Scoped in^	Scoped in^	Scoped in^
Severn Estuary Ramsar	Scoped in^	Scoped in^	Scoped in^	Scoped in^	Scoped in^	Scoped in^

*Including functionally linked habitat.

^Functionally linked habitat only.

Chapter 5

Consultation and Next Steps

5.1 This Scoping Report has introduced the HRA process that will be undertaken in relation to the Local Plan Partial Update. It has been produced to provide guidance for developing the Local Plan Partial Update in the context of European sites and as an early reference point for stakeholders wishing to comment on the scope of the HRA.

5.2 This HRA Scoping Report is being published for consultation during early 2022. Whilst there is no formal requirement to do so at this stage, this document will be subject to consultation with Natural England to confirm that the proposed scope of the assessment is considered appropriate.

5.3 Consultees are requested to consider the following questions in particular:

- Have we correctly identified the European sites that should be scoped-in to the HRA of the Local Plan Partial Update (see **Chapter 3** and **Appendix A**)?
- Have we correctly identified the sensitivities of the scoped-in European sites to potential impacts from the Local Plan Partial Plan Update (see **Chapter 4** and **Appendix B**)?
- Is the proposed approach to HRA of the Local Plan Partial Update reasonable (see **Chapters 2** and **4**)?

5.4 Responses from consultees will be reviewed and any necessary amendments to the approach to and information in the HRA report will be made.

5.5 Following the methodology (**Chapter 2**), the HRA report will be progressed throughout the Local Plan Partial Update process, with the HRA report relating to each iteration of the Local Partial Update being published during consultation

Appendix A European Sites scoped into the assessment

periods. Specific consultation on subsequent HRA Reports will be undertaken with Natural England as the statutory consultation body for HRA as the Local Plan Partial Update progresses, as required.

5.6 After the consultation, the next stage of the HRA process (Screening) will determine whether the Local Plan Partial Update will result in any likely significant effects (LSE) to the European sites scoped into further assessment. Alongside information on the emerging Local Plan Partial Update, the following key pieces of information will be reviewed within the Screening stage:

- Existing avoidance and mitigation strategies for European sites;
- Air pollution data from APIS in relation to European sites near to major roads; and
- Water resources management plans for Cotswold District and neighbouring authorities.

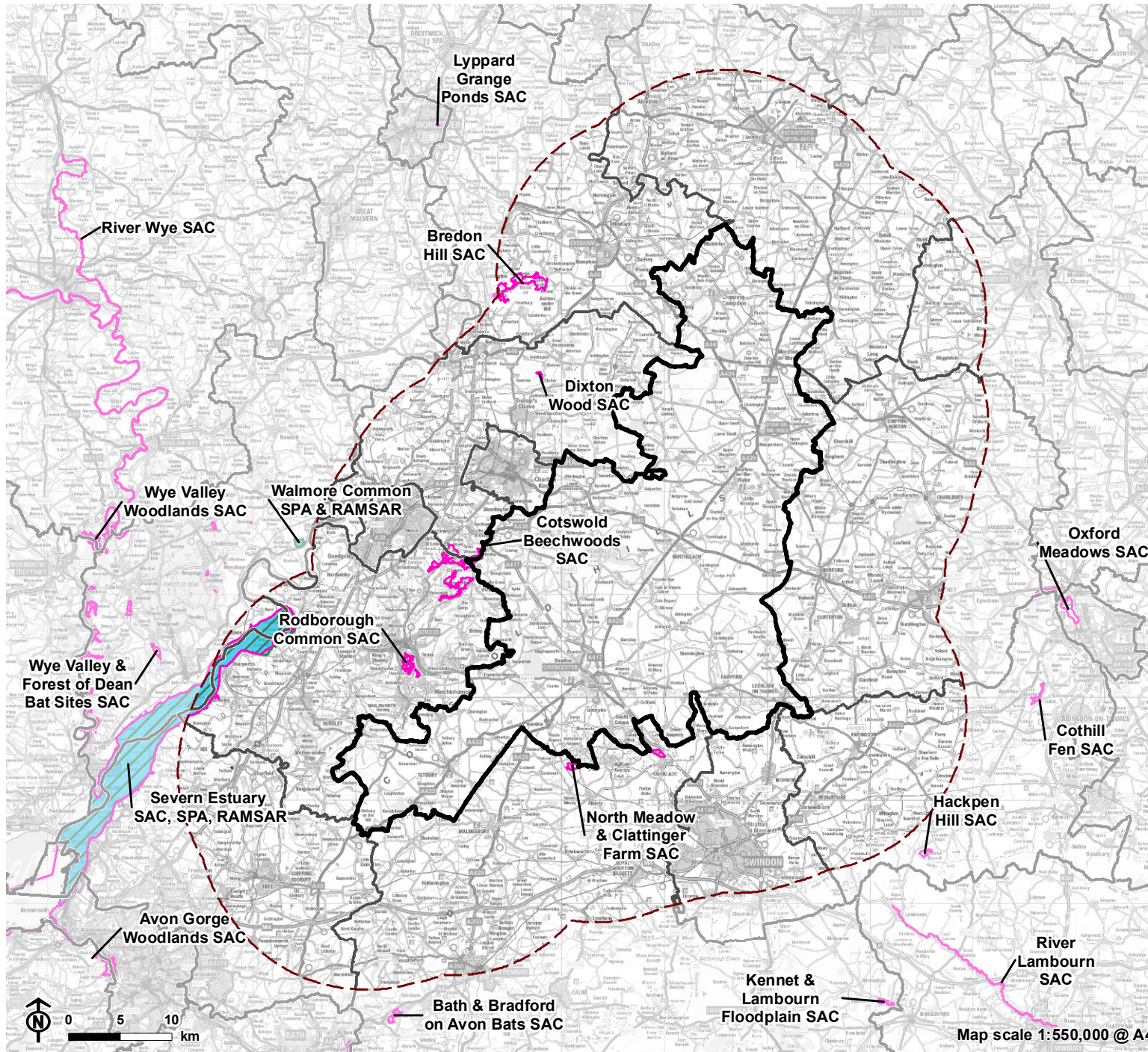
5.7 European sites where LSE cannot be avoided will be required to proceed to Appropriate Assessment stage to determine whether the Local Plan Partial Update will result in Adverse Effects on Integrity (AEoI). The Appropriate Assessment stage can also take into account any mitigation, such as safeguards embedded within Local Plan Partial Update policies.

Appendix A

European Sites scoped into the assessment



Figure A.1: European Sites within 15km of Cotswold District



- Cotswold District boundary
- 15km from Cotswold District boundary
- Surrounding Local Authorities
- Habitat sites**
- Special Areas of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar

Appendix B

Attributes of European sites scoped into the assessment.

Appendix B Attributes of European sites scoped into the assessment.

Cotswold Beechwoods SAC	
Site Description	
<p>The Cotswold Beechwoods represent the most westerly extensive blocks of <i>Asperulo-Fagetum</i> beech forests in the UK.</p> <p>The woods are floristically richer than the Chilterns, and rare plants include red helleborine <i>Cephalanthera rubra</i>, stinking hellebore <i>Helleborus foetidus</i>, narrow-lipped helleborine <i>Epipactis leptochila</i> and wood barley <i>Hordelymus europaeus</i>. There is a rich mollusc fauna. The woods are structurally varied, including blocks of high forest and some areas of remnant beech coppice.</p>	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
9130	<i>Asperulo-Fagetum</i> beech forests
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)
Special Area of Conservation Objectives	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of qualifying natural habitats; ■ The structure and function (including typical species) of qualifying natural habitats; and ■ The supporting processes on which qualifying natural habitats rely. 	
Site Improvement Plan [See reference 33]: Pressures, Threats and Related Development	
<p>The main current threats to the site include:</p> <ol style="list-style-type: none"> 1. Invasive Species - The dumping of garden waste and the consequent spread of invasive plants is an on-going threat. The spread of the non-native sycamore provides a challenge and has made particular use of canopy gaps created by storm damage. Although sycamore is considered an acceptable component of woodlands, including beechwoods, on the continent, in the Cotswold it tends to dominate understorey and canopy to the detriment of other (native) tree species. 	

Cotswold Beechwoods SAC
<p>2. Deer - Deer browsing of regenerating trees (and possibly ground flora) remains a major threat to favourable condition throughout the beechwoods.</p> <p>3. Invasive Species - Grey squirrel numbers have increased sharply over the past decade or so and now cause significant damage to tree species, in particular beech. In places, this can lead to pole stage beech being systematically ring barked and killed.</p> <p>4. Disease - Although not known to be present in the Cotswold as yet, <i>Chalara</i> (ash disease) is a major future threat to the beechwoods.</p> <p>5. Public Access/Disturbance - . A particular increase has been the use of mountain bikes and horse-riding which use the woods far beyond the limited network of bridleways. This has created numerous additional trackways and so increasing the erosion of the ground flora and potentially opportunities for water erosion. Although the routes away from bridleways are not usually permitted, much of the SAC woodland is NNR or has public access by foot. Additionally, dog walking has increased within the SAC especially at Coopers Hill where car parking is available. This has become a particular issue where professional dog walkers release large numbers of dogs (up to 12) to run uncontrolled through the woods. This causes disturbance to wildlife as well as local nutrification through dog faeces.</p> <p>6. Changes in Species Distributions - There is a risk that global warming will increase the risk of drought to beech trees (which are shallow rooted).</p> <p>7. Air Pollution: impact of atmospheric nitrogen deposition - Nitrogen deposition exceeds site relevant critical loads. High atmospheric nitrogen levels could affect the SAC features through: changes in ground vegetation and mycorrhiza; nutrient imbalance; changes to soil fauna; increase in tall grasses; decline in diversity; increased mineralization; N leaching; or surface acidification.</p>
Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
The qualifying habitats rely upon soil quality and water quality/quantity.

North Meadow and Clattinger Farm SAC
Site Description

Appendix B Attributes of European sites scoped into the assessment.

North Meadow and Clattinger Farm SAC	
<p>North Meadow & Clattinger Farm Meadows SAC consists of a series of traditionally managed unimproved grasslands within the floodplain of the Upper Thames which continue to be managed as pasture and as hay-meadow.</p> <p>It contains a rich variety of species-rich grassland types including the rare MG4 community for which the SAC is designated as well as a number of notable plant species. These grasslands represent rare and scattered remnants of a much more widespread unimproved grassland habitat before agricultural intensification and extensive gravel quarrying locally were responsible for widespread losses of this habitat and its subsequent fragmentation.</p>	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
6510	Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)
Special Area of Conservation Objectives	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of qualifying natural habitats; ■ The structure and function (including typical species) of qualifying natural habitats; and ■ The supporting processes on which qualifying natural habitats rely. 	
Site Improvement Plan [See reference 34]: Pressures, Threats and Related Development	
<p>The main current threats to the site include:</p> <ol style="list-style-type: none"> 1. Inappropriate Water Levels - An effective WLMP needs to be in place in order to protect the integrity of the site. There have been several unseasonal floods over the last six years which are beginning to cause changes and losses in the vegetation communities on the site. 2. Water Pollution - Both sediment and nutrient input are of concern. A diffuse pollution plan is in place and catchment sensitive farming initiative covers the catchment. Diffuse pollution has the potential to affect aquatic habitats and species as well as habitat quality in areas of riverside habitat supporting <i>Vertigo moulinsiana</i>. Diffuse pollution is arising from highway runoff as well as from farmland. Pollution also results from overflowing 	

North Meadow and Clattinger Farm SAC
<p>sewers (a result of high groundwater levels infiltrating sewers) with ongoing/recurring incidents at numerous locations on the River Lambourn.</p> <p>3. Habitat Fragmentation - The two component SSSIs are located 8km apart. Inclusion and restoration of a number of intervening sites locally would increase the habitat, thereby making it more resilient to fluctuating water levels in the face of climate change. The NNR team at North Meadow has, over a number of years, been working to achieve this aim. Also, one option is that additional land should be included within the North Meadow SSSI for this purpose. This would help buffer the site, possibly provide space for adaptation in anticipation of the effects of climate change, and better manage visitor impacts. Clattinger forms part of a more extensive site which provides good opportunities for on-site management.</p> <p>4. Commons Management - Fencing is required to keep livestock from straying off site. North Meadow NNR is common land and it is the responsibility of neighbouring landowners to erect fences. There are a number of problems involved in achieving this.</p> <p>5. Public Access/Disturbance - There is increasing visitor pressure especially during the flowering time of Snake's-head Fritillary leading to localised damage on sites in the SAC.</p> <p>6. Water Pollution - The SAC's hay meadow vegetation communities are sensitive to elevated nutrient levels. With increasing flooding there is an increased risk of flood water carrying diffuse pollution onto the site and causing soil enrichment with negative consequences for the species richness of the meadows.</p>
<p>Non-qualifying habitats and species upon which the qualifying habitats and/or species depend</p>
<p>The qualifying habitats rely upon soil quality and water quality/quantity.</p>

Rodborough Common SAC
<p>Site Description</p>
<p>Rodborough Common is the most extensive area of semi-natural dry grasslands surviving in the Cotswolds of central southern England, and represents CG5 <i>Bromus erectus</i> – <i>Brachypodium pinnatum</i> grassland, which is more or less confined to the Cotswolds.</p>

Appendix B Attributes of European sites scoped into the assessment.

Rodborough Common SAC	
The site contains a wide range of structural types, ranging from short turf through to scrub margins, although short-turf vegetation is mainly confined to areas of shallower soils.	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)
Special Area of Conservation Objectives	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of qualifying natural habitat; ■ The structure and function (including typical species) of qualifying natural habitat; and ■ The supporting processes on which qualifying natural habitat rely. 	
Site Improvement Plan [See reference 35]: Pressures, Threats and Related Development	
<p>The main current threats to the site include:</p> <ol style="list-style-type: none"> 1. Undergrazing - Undergrazing is an issue due to the reliance on the rights of commoners to turn out cattle. The number of stock have dropped over the years to the point that additional cattle now need to be electric fenced on to the most species-rich areas on the slopes. It is the lower slopes that are the most species-rich and are suffering from a lack of grazing. 2. Public Access/Disturbance - The common is very close to Stroud and recreational use has greatly increased over the past few decades. This has created many new paths and parking areas which cause soil compaction to the detriment of the surrounding sward. Dog faeces is a particular issue which also damages the sward . New and proposed housing continues to add to the problem. 3. Air Pollution: risk of atmospheric nitrogen deposition - Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. 	

Appendix B Attributes of European sites scoped into the assessment.

Rodborough Common SAC
Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
The qualifying habitats rely upon soil quality and water quality/quantity.

Dixton Wood SAC	
Site Description	
Violet click beetle <i>Limoniscus violaceus</i> was discovered at Dixton Wood in 1998 and it has been found at the site on a single occasion subsequently. It is a small site with large number of ancient ash <i>Fraxinus excelsior</i> pollards, and supports a rich fauna of scarce invertebrate species associated with decaying timber on ancient trees.	
Qualifying Features	
Annex II species that are a primary reason for selection of this site	
1079	Violet click beetle <i>Limoniscus violaceus</i>
Special Area of Conservation Objectives	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;	
<ul style="list-style-type: none"> ■ The extent and distribution of the habitats of qualifying species; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which the habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site. 	
Site Improvement Plan [See reference 36]: Pressures, Threats and Related Development	
<p>1. Changes in Species Distributions - Because of its rarity and highly specialised ecology associated with decaying wood and leaf litter in tree cavities, specialist involvement is required for survey, monitoring and the provision of detailed habitat management advice.</p>	

Appendix B Attributes of European sites scoped into the assessment.

Dixton Wood SAC
<p>2. Forestry and Woodland Management - The beetle depends on the production of humid wood mould where it lives for part of its life cycle within decaying trees; this is typically found in veteran trees where they show signs of rot. The amount of suitable and available wood mould in the SAC is unknown. The lack of succession in veteran cohorts is an issue and it make the need for extending the life of the existing veteran trees even more important.</p> <p>3. Disease - Ash dieback disease <i>Chalara fraxinea</i> is a potential threat to the site. The Violet click beetle population at Dixton Wood is thought only to use ash trees.</p>
Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
<p>Violet click beetle</p> <ul style="list-style-type: none"> ■ Habitat preferences – ancient and veteran trees ■ Diet – wood mould

Bredon Hill SAC	
Site Description	
Bredon Hill is an outlier of the Cotswolds with remnants of wood pasture and many veteran trees. Their dead wood supports one of the three known populations of the Violet click beetle <i>Limoniscus violaceus</i> , in the UK.	
Qualifying Features	
Annex II species that are a primary reason for selection of this site	
1079	Violet click beetle <i>Limoniscus violaceus</i>
Special Area of Conservation Objectives	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of the habitats of qualifying species; ■ The structure and function of the habitats of qualifying species; 	

Appendix B Attributes of European sites scoped into the assessment.

<p>Bredon Hill SAC</p>
<ul style="list-style-type: none"> ■ The supporting processes on which the habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.
<p>Site Improvement Plan: Pressures, Threats and Related Development</p>
<ol style="list-style-type: none"> 1. Forestry and Woodland Management - The lack of succession in veteran tree cohorts is an issue, as current planting will only benefit the beetles after about 400 years and it is uncertain how long tree surgery will prolong the veterans' lives. The beetle depends on the production of humid wood mould within decaying trees and the amount of available wood mould in the SAC is unknown. 2. Feature Location/Extent/Condition Unknown - There is a current lack of information on the distribution across the site of the rare and secretive Violet click beetle. 3. Disease - Ash die-back caused by the <i>Chalara fraxinea</i> fungus threatens the large number of current veteran ash trees and their replacements on which the Violet click beetle depends. Whilst the beetle is known to use other species elsewhere (eg Windsor), ash dominates the trees on Bredon Hill. The scale of this impact on the persistence and continuity of wood mould is uncertain and is likely to be beyond human control. 4. Air Pollution: impact of atmospheric nitrogen deposition - Nitrogen deposition exceeds site relevant critical loads. This site is sensitive to nitrogen deposition. 5. Climate Change - The likelihood of increased violent storm events and the viability of ash in a changed environment threatens the veteran ash trees on which the beetle depends.
<p>Non-qualifying habitats and species upon which the qualifying habitats and/or species depend</p>
<p>Violet click beetle</p> <ul style="list-style-type: none"> ■ Habitat preferences – ancient and veteran trees ■ Diet – wood mould

Appendix B Attributes of European sites scoped into the assessment.

Severn Estuary SAC	
Site Description	
<p>The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The subtidal seabed is rock and gravel with subtidal sandbanks. The site also supports reefs of the tube forming worm <i>Sabellaria alveolata</i>.</p> <p>The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have one of the highest tidal ranges in the world. A consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. The species-poor intertidal invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders and fish.</p> <p>The site is of importance during the spring and autumn migration periods for waders, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. The fish fauna is very diverse with more than 110 species identified. The site is of particular importance for migratory fish.</p>	
Qualifying Features	
Annex I habitats that are a primary reason for selection of this site	
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	
1110	Sandbanks which are slightly covered by sea water all the time
1170	Reefs
Annex II species that are a primary reason for selection of this site	
1095	Sea lamprey <i>Petromyzon marinus</i>
1099	River lamprey <i>Lampetra fluviatilis</i>
1103	Twaite shad <i>Alosa fallax</i>

Severn Estuary SAC
Special Area of Conservation Objectives
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of qualifying natural habitats and habitats of qualifying species; ■ The structure and function (including typical species) of qualifying natural habitats; ■ The structure and function of the habitats of qualifying species; ■ The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; ■ The populations of qualifying species; and ■ The distribution of qualifying species within the site.
Site Improvement Plan [See reference 37]: Pressures, Threats and Related Development
<ol style="list-style-type: none"> 1. Public Access/Disturbance - Public access and recreation (including third party activities) may have an impact on bird species sensitive to disturbance, causing displacement from feeding, roosting and moulting areas, and if severe could affect long term survival and population numbers and distributions within the Estuary. 2. Physical Modification - Modification to water courses and barriers to Annex II migratory fish (and those included in the fish assemblage) in the tributary rivers are preventing completion of the life cycle and potentially altering the hydrodynamics of the site. 3. Impacts of Development - Strategic planning issue. More rigorous assessment of cumulative, in-combination and offsite impacts (drainage, disturbance, runoff, impacts on managed realignment etc) on sensitive bird species and other habitats and species may be required, given the range of planned development within and adjacent to the Estuary (including residential, transport, energy and other industrial developments). 4. Coastal Squeeze - As sea levels rise, man-made defences are constraining the natural roll back of estuarine habitats, causing squeeze and loss of habitat and having impacts on species dependent upon those habitats (birds: feeding/ roosting, and fish: feeding/ nursery and shelter areas).

Severn Estuary SAC

- 5. Change in Land Management** - Changes in management and use of grassland and saltmarsh habitat within and bordering the estuary. Changes in ownership and other land practices can result in changes in management and use of land (e.g. changes in grazing practice) which affects species composition, habitat availability, and quality of saltmarsh habitats and use of land for other activities that may cause damage or disturbance.
- 6. Changes in Species Distributions** - There is a risk of significant changes in estuarine populations (including declines in some SPA bird populations) in parts of the Estuary resulting from climate change and other man-made and natural modifications to on and offsite environments. In many cases the causes of the changes to species distribution are unknown.
- 7. Water Pollution** - There is uncertainty over water quality in the Estuary due to diffuse (including agricultural) or direct pollution (e.g. industrial, sewage treatment works, thermal, radioactive).
- 8. Air Pollution: impact of atmospheric nitrogen deposition** - Activities around the Estuary include fertiliser application, potentially dairy and poultry production, road traffic, industry (including power stations), and shipping which are all sources of nitrogen pollution. Nitrogen deposition exceeds site relevant critical loads, with potential impacts on vegetation structure and diversity.
- 9. Marine Consents and Permits: minerals and waste** - The cumulative impacts of aggregate extraction, maintenance dredging and disposal can have adverse impacts on features. While most activity is regulated under marine licences, cumulative effects are not always fully considered.
- 10. Fisheries: Recreational marine and estuarine** - Further information is required on the levels and location of activity and potential impact of recreational bait digging and recreational fishing/angling. There are unknown impacts in the vicinity of potentially sensitive roosting and feeding areas, and on intertidal reef habitats.
- 11. Fisheries: Commercial marine and estuarine** - Dredges (inc. hydraulic), benthic trawls and seines are categorised as 'red' for the reef features (specifically the sub-feature *Sabellaria* spp. reef) as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS).
- 12. Invasive Species** - There are recent reports of marine invasive non-native species (the Australian barnacle *Austrominius modestus*, Mitten crab *Eriocheir sinensis*, and the Pacific Oyster *Crassostrea gigas*) in the Estuary (or the Bristol Channel). These could have an impact on native species and habitats but the abundance and impact in the Severn Estuary of these species is unclear.

Appendix B Attributes of European sites scoped into the assessment.

Severn Estuary SAC
<p>13. Marine Litter - The marine environment is a sink for man-made litter which often originates from rivers. Impacts are not fully understood.</p> <p>14. Marine Pollution Incidents - Marine pollution incidents and responses to such incidents have the potential for significant negative impacts on the site and its features.</p>
<p>Non-qualifying habitats and species upon which the qualifying habitats and/or species depend</p>
<p>The qualifying habitats rely upon water quality/quantity.</p> <p>River lamprey</p> <ul style="list-style-type: none"> ■ Habitat preferences – freshwater and wetlands ■ Diet – aquatic fauna <p>Sea lamprey</p> <ul style="list-style-type: none"> ■ Habitat preferences – marine, although spawns in freshwater rivers, requiring clean gravel or silt/sand for borrowing juveniles. ■ Diet – aquatic fauna <p>Twaite shad</p> <ul style="list-style-type: none"> ■ Habitat preferences – marine, although spawns in freshwater rivers, requiring deep pools. ■ Diet – aquatic fauna

Severn Estuary SPA	
Site Description	
See Severn Estuary SAC for further information.	
Qualifying Features	
A037	<i>Cygnus columbianus bewickii</i> ; Bewick’s swan (Non-breeding)
A048	<i>Tadorna tadorna</i> ; Common shelduck (Non-breeding)
A051	<i>Anas strepera</i> ; Gadwall (Non-breeding)
A149	<i>Calidris alpina alpina</i> ; Dunlin (Non-breeding)

Appendix B Attributes of European sites scoped into the assessment.

Severn Estuary SPA	
A162	<i>Tringa totanus</i> ; Common redshank (Non-breeding)
A394	<i>Anser albifrons albifrons</i> ; Greater white-fronted goose (Non-breeding)
Waterbird assemblage	
Special Area of Conservation Objectives	
<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> ■ The extent and distribution of the habitats of the qualifying features; ■ The structure and function of the habitats of the qualifying features; ■ The supporting processes on which the habitats of the qualifying features rely; ■ The population of each of the qualifying features; and ■ The distribution of the qualifying features within the site. 	
Site Improvement Plan [See reference 38]: Pressures, Threats and Related Development	
Severn Estuary Site Improvement Plan covers both the Severn Estuary SPA and Severn Estuary SAC. See Severn Estuary SAC for further information.	
Non-qualifying habitats and species upon which the qualifying habitats and/or species depend	
<p>The qualifying habitats rely upon water quality/quantity.</p> <p>Bewick’s swan</p> <ul style="list-style-type: none"> ■ Habitat preference – freshwater, farmland, coastal, wetlands ■ Diet – potatoes, grain, aquatic plants and grasses <p>Common shelduck</p> <ul style="list-style-type: none"> ■ Habitat preference – coastal areas, inland reservoirs and gravel workings. ■ Diet – invertebrates, small shellfish and aquatic snails <p>Gadwall</p> <ul style="list-style-type: none"> ■ Habitat preference – marshes, lakes, and on migration also rivers and estuaries. 	

Appendix B Attributes of European sites scoped into the assessment.

Severn Estuary SPA
<ul style="list-style-type: none"> ■ Diet – leaves, shoots, mostly while swimming with head under water. <p>Dunlin</p> <ul style="list-style-type: none"> ■ Habitat preference – tundra, moor, heath, and on migration estuaries and coastal habitat. ■ Diet - insects, snails and worms. <p>Common redshank</p> <ul style="list-style-type: none"> ■ Habitat preference – rivers, wet grassland, moors and estuaries. ■ Diet - invertebrates, especially earthworms, crane-fly larvae (inland) crustaceans, molluscs, marine worms (estuaries). <p>Greater white-fronted goose</p> <ul style="list-style-type: none"> ■ Habitat preference – farmland grassland marine and intertidal wetland ■ Diet - grass, clover, grain, winter wheat and potatoes.

Severn Estuary Ramsar
<p>Site Description</p> <p>The estuary's classic funnel shape, unique in Britain, is a factor causing the Severn to have the second-largest tidal range in the world (after the Bay of Fundy, Canada). This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide swept sand and rock. The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders.</p> <p>A further consequence of the large tidal range is the extensive intertidal zone, one of the largest in the UK, comprising mudflats, sand banks, shingle, and rocky platforms.</p> <p>Glassworts and annual sea-blite colonise the open mud, with beds of all three species of eelgrass <i>Zostera</i> occurring on more sheltered mud and sandbanks. Large expanses of common cord-grass also occur on the outer marshes. Heavily grazed saltmarsh fringes the estuary with a range of saltmarsh types present. The middle marsh sward is dominated by common saltmarsh-grass with typical associated species. In the upper marsh, red fescue and saltmarsh rush become more prominent.</p>
<p>Ramsar Criteria</p>

Appendix B Attributes of European sites scoped into the assessment.

Severn Estuary Ramsar											
1	<p>Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities.</p> <p>Habitats Directive Annex I features present on the SAC include:</p> <ul style="list-style-type: none"> ■ H1110 - Sandbanks which are slightly covered by sea water all the time ■ H1130 - Estuaries ■ H1140 - Mudflats and sandflats not covered by seawater at low tide ■ H1330 - Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 										
3	Due to unusual estuarine communities, reduced diversity and high productivity.										
4	This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon <i>Salmo salar</i> , sea trout <i>S. trutta</i> , sea lamprey <i>Petromyzon marinus</i> , river lamprey <i>Lampetra fluviatilis</i> , allis shad <i>Alosa alosa</i> , twaite shad <i>A. fallax</i> , and eel <i>Anguilla anguilla</i> . It is also of particular importance for migratory birds during spring and autumn.										
5	Assemblages of international importance:										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Species with peak counts in winter:</td> <td style="width: 50%;">70919 waterfowl (5 year peak mean 1998/99-2002/2003)</td> </tr> </table>	Species with peak counts in winter:	70919 waterfowl (5 year peak mean 1998/99-2002/2003)								
Species with peak counts in winter:	70919 waterfowl (5 year peak mean 1998/99-2002/2003)										
6	Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Species with peak counts in winter:</td> <td style="width: 70%;">Tundra swan, <i>Cygnus columbianus bewickii</i>, NW Europe</td> </tr> <tr> <td></td> <td>Greater white-fronted goose, <i>Anser albifrons albifrons</i>, NW Europe</td> </tr> <tr> <td></td> <td>Common shelduck, <i>Tadorna tadorna</i>, NW Europe</td> </tr> <tr> <td></td> <td>Gadwall, <i>Anas strepera strepera</i>, NW Europe</td> </tr> <tr> <td></td> <td>Dunlin, <i>Calidris alpina alpina</i>, W Siberia/W Europe</td> </tr> </table>	Species with peak counts in winter:	Tundra swan, <i>Cygnus columbianus bewickii</i> , NW Europe		Greater white-fronted goose, <i>Anser albifrons albifrons</i> , NW Europe		Common shelduck, <i>Tadorna tadorna</i> , NW Europe		Gadwall, <i>Anas strepera strepera</i> , NW Europe		Dunlin, <i>Calidris alpina alpina</i> , W Siberia/W Europe
Species with peak counts in winter:	Tundra swan, <i>Cygnus columbianus bewickii</i> , NW Europe										
	Greater white-fronted goose, <i>Anser albifrons albifrons</i> , NW Europe										
	Common shelduck, <i>Tadorna tadorna</i> , NW Europe										
	Gadwall, <i>Anas strepera strepera</i> , NW Europe										
	Dunlin, <i>Calidris alpina alpina</i> , W Siberia/W Europe										

Appendix B Attributes of European sites scoped into the assessment.

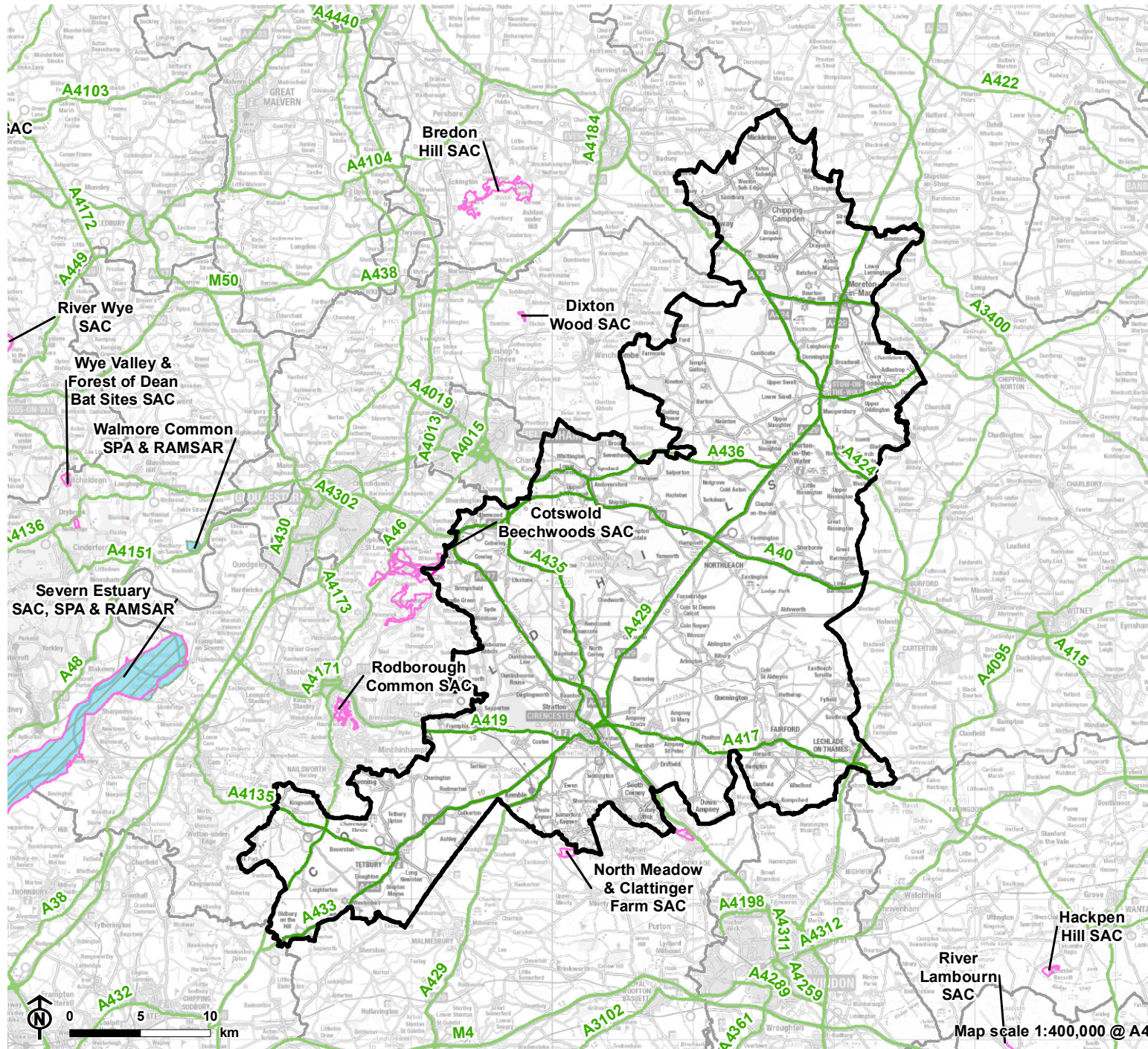
Severn Estuary Ramsar	
	Common redshank, <i>Tringa totanus totanus</i>
	Species/populations identified subsequent to designation for possible future consideration under criterion 6.
Species regularly supported during the breeding season:	Lesser black-backed gull, <i>Larus fuscus graellsii</i> , W Europe/Mediterranean/W Africa
Species with peak counts in spring/autumn:	Ringed plover, <i>Charadrius hiaticula</i> , Europe/Northwest Africa
Species with peak counts in winter:	Eurasian teal, <i>Anas crecca</i> , NW Europe
	Northern pintail, <i>Anas acuta</i> , NW Europe
8	The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon <i>Salmo salar</i> , sea trout <i>S. trutta</i> , sea lamprey <i>Petromyzon marinus</i> , river lamprey <i>Lampetra fluviatilis</i> , allis shad <i>Alosa alosa</i> , twaite shad <i>A. fallax</i> , and eel <i>Anguilla Anguilla</i> use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad <i>Alosa alosa</i> and twaite shad <i>A. fallax</i> which feed on mysid shrimps in the salt wedge.
Ramsar Information Sheet (RIS) [See reference 39] : Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:	
<ul style="list-style-type: none"> ■ Dredging ■ Erosion ■ Recreational/tourism disturbance (unspecified) 	
Non-qualifying habitats and species upon which the qualifying habitats and/or species depend	
See Severn Estuary SPA.	

Appendix C

Key Strategic Roads within Cotswold District and Surrounding Area



Figure C.1: Key Strategic Roads within Cotswold District and Surrounding Area



- Cotswold District boundary
- Surrounding Local Authorities
- Strategic road
- Habitat sites**
- Special Areas of Conservation (SAC)
- Special Protection Area (SPA)
- Ramsar

References

- 1 The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007 (2007) SI No. 2007/1843. TSO (The Stationery Office), London.
- 2 The Conservation of Habitats and Species Regulations 2017 (2017) SI No. 2017/1012, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), TSO (The Stationery Office), London.
- 3 The exception to this would be where 'imperative reasons of overriding public interest' can be demonstrated; see paragraph 2.4.
- 4 The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated. (Source: UK Government Planning Practice Guidance)
- 5 <https://www.gov.uk/guidance/appropriate-assessment>
- 6 Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive')
- 7 Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (the 'Birds Directive')
- 8 The network of protected areas identified by the EU:
https://ec.europa.eu/environment/nature/natura2000/index_en.htm
- 9 <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>
- 10 NPPF (2021) para 181, available from
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf
- 11 The HRA Handbook, Section A3. David Tyldesley & Associates, a subscription based online guidance document:
<https://www.dtapublications.co.uk/handbook/European>

- 12 Regulation 5 of The Conservation of Habitats and Species Regulations 2017 (SI 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579)
- 13 European Commission (2001) 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.
- 14 UK Government Planning Practice Guidance, available from <https://www.gov.uk/guidance/appropriate-assessment>
- 15 The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document: <https://www.dtapublications.co.uk/handbook/European>
- 16 [Conservation objectives](#) are published by Natural England for SACs and SPAs.
- 17 In line with the CJEU judgment in Case C-323/17 People Over Wind v Coillte Teoranta, mitigation must only be taken into consideration at this stage and not during Stage 1: HRA Screening.
- 18 In addition to European site citations and conservation objectives, key information sources for understanding factors contributing to the integrity of European sites include (where available) conservation objectives supplementary advice and [Site Improvement Plans](#) prepared by Natural England.
- 19 European Court of Justice in Case C-127/02 Landelijke Vereniging tot Behoud van de Waddenzee
- 20 Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala 22nd Nov 2012.
- 21 The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document [online] Available at: <https://www.dtapublications.co.uk/handbook/European>
- 22 Gouix, N., Sebek, P., Valladares, L., Brustel, H. and Brin, A. (2015). Habitat requirements of the violet click beetle (*Limoniscus violaceus*), an

- endangered umbrella species of basal hollow trees. *Insect Conservation and Diversity*. 8. 10.1111/icad.12119.
- 23** Link Ecology Ltd (2020). Identification of Land with Proven or Possible Functional Linkages With The Severn Estuary SSSI/SPA Phase 5 (Gloucestershire And Worcestershire)
- 24** <http://www.apis.ac.uk/>
- 25** <https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90>
- 26** Wealden District Council v. (1) Secretary of State for Communities and Local Government; (2) Lewes District Council; (3) South Downs National Park Authority and Natural England
- 27** Natural England (2020) Monitoring Engagement with the Natural Environment, MENE Visit data Year 1 to 10 filtered by resident local authority (Cotswold) and distance travelled (q8), <http://publications.naturalengland.org.uk/publication/4897139222380544>
- 28** Enfusion (2012) Habitats Regulations Assessment (Appropriate Assessment) Report, South Worcestershire Development Plan Pre-Submission Consultation.
- 29** Footprint Ecology (2020). Cotswold Beechwoods SAC Recreation Mitigation Strategy.
- 30** LUC (2021). North Meadow and Clattinger Farm SAC. North Meadow Interim Mitigation Strategy. Interim draft report. LUC, London
- 31** Footprint Ecology (2019). Rodborough Common Visitor Survey.
- 32** EPR (2016) Severn Estuary (Stroud District) Visitor Survey Report.
- 33** Natural England - Site Improvement Plan: Cotswold Beechwoods (SIP048)
<http://publications.naturalengland.org.uk/publication/6276086220455936>
- 34** Natural England - Site Improvement Plan: North Meadow & Clattinger Farm (SIP152)
<http://publications.naturalengland.org.uk/publication/4565167836758016>

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- 35** Natural England - Site Improvement Plan: Rodborough Common (SIP202)
<http://publications.naturalengland.org.uk/publication/5525408413908992>
- 36** Natural England - Site Improvement Plan: Dixton Wood (SIP061)
<http://publications.naturalengland.org.uk/publication/5468132676206592>
- 37** Natural England - Site Improvement Plan: Severn Estuary Mor Hafren (SIP213)
<http://publications.naturalengland.org.uk/publication/4590676519944192>
- 38** Natural England - Site Improvement Plan: Severn Estuary Mor Hafren (SIP213)
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- 39** Ramsar Information Sheet (RIS): Severn Estuary (11081)
<https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf>

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