HRA02

Winchester City Council

Winchester District Local Plan Habitats Regulations Assessment
Scoping Report

Final report
Prepared by LUC
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Winchester City Council

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Scoping Report

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Chapter 1
Introduction

An introduction to Habitats Regulations Assessment and the Winchester District Local Plan

1.1 LUC has been commissioned by Winchester City Council to carry out a Habitats Regulations Assessment (HRA) of its emerging Local Plan.

1.2 The purpose of this report is to identify which European sites have the potential to be affected by the Local Plan, collate information on these sites, outline the pathways by which they could be affected, and to set out the scope of the subsequent HRA Screening and Appropriate Assessment.

Background to the Local Plan

1.3 Winchester City Council adopted Part 1 of its current Local Plan in March 2013, with Part 2 – Development Management and Site Allocations being adopted by the Council in April 2017. The Denmead Neighbourhood Plan, which forms part of the current Local Plan was made in April 2015 and is in the very early stages of being updated. The final Development Plan Document (DPD) within the current Local Plan is the Gypsy, Traveller and Travelling Show people DPD, which was adopted February 2019. The new Local Plan will cover the period to 2038 and replace the existing Local Plans for Winchester District excluding the South Downs National Park, which has its own adopted Local Plan.

1.4 The City Council undertook an initial consultation in 2018 to gather feedback on key issues for the district to be addressed by the new Local Plan. Since then the Council has declared a climate emergency in June 2019 and is committed to becoming a carbon neutral council by 2024. The ambition for the wider district is that it should become carbon neutral by 2030. The target of achieving carbon neutrality must be fully woven into the local plan making process and any implications will need to be taken into account in the HRA.

1.5 The council will be consulting on the initial Strategic Issues and Options in September 2020 and is aiming to issue a Draft Local Plan for consultation ('Regulation 18') in March/April 2021. A Habitats Regulations Assessment report will be published alongside the Draft Plan for consultation.

The requirement to undertake Habitats Regulations Assessment of Development Plans

1.6 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in 2007; the currently applicable version is the Habitats Regulations 2017 as amended. These updates were consolidated into the Conservation of Habitats and Species Regulations 2017[1].

1.7 The UK exited the EU on 31 January 2020. There is now a transition period until the end of 2020 during which EU legislation and policy will be followed. The only exception to this is that while EU case law from before 31 January 2020 will continue to be relevant to the UK position, any modifications to the law as a result of cases after that date will not be relevant to the UK. The 2019 EU Exit amendments will not come into effect until the end of the Implementation Period. The Regulations remain exactly as they were before 31 January 2020. The 2017 Regulations as amended by earlier (non-Brexit) amendments are in effect but are currently unamended by the EU Exit amendments.

1.8 The HRA refers to the assessment of the potential effects of a development plan on one or more European Sites, including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs):

- SACs are designated under the Habitats Regulations as amended and target particular habitat types (specified in Annex 1 to the Habitats Directive) and species (specified in Annex II to the Habitats Directive). These annexes to the Habitats Directive list habitat types and species (excluding birds) considered to be most in need of conservation at a European level. Designation of SACs also has regard to the threats of degradation or destruction to which the sites are exposed and, before EU exit day, to the coherence of the Natura 2000 network of European sites. After EU exit day, regard is had to the importance of such sites for the coherence of the national site network.
- SPAs are areas classified [2] for rare and vulnerable birds or regularly occurring migratory species.

1.9 Potential SPAs (pSPAs)[3], candidate SACs (cSACs)[4], Sites of Community Importance (SCIs)[5] and Ramsar sites should also be included in the HRA.

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

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

1.11 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or the whole development plan, would adversely affect the integrity of the European site in question either alone or in combination with other plans and projects. This is judged in terms of the implications of the plan for the 'qualifying features' for which the European site was designated, i.e.:

- SACs – Annex I habitat types and Annex II species[6];
- SPAs – Annex I birds and regularly occurring migratory species not listed in Annex I[7];
- Ramsar sites – the reasons for listing the site under the Convention[8].

1.12 Significantly, HRA is based on the precautionary principle meaning that where uncertainty or doubt remains, an adverse impact should be assumed.

Stages of HRA

1.13 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. **Table 1.1** summarises the stages and associated tasks and outcomes typically involved in carrying out a full HRA, based on various guidance documents[9,10,11,12]

[1] *The Conservation of Habitats and Species Regulations 2017* (Statutory Instrument 2017/1012), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579)
[2] Classified (a) before the day of the UK's exit from the EU (31 January 2020) in accordance with Article 4(1) or 4(2) of the European Union Wild Birds Directive for rare and vulnerable birds (as listed in Annex I of the Directive), and under Article 4(2) for regularly occurring migratory species not listed in Annex I, or (b) after exit day under the retained transposing regulations.
[3] Potential SPAs are sites that have been approved by the Minister for formal consultation but not yet proposed to the European Commission, as listed on the GOV.UK website.
[4] Candidate SACs are sites that have been submitted to the European Commission, but not yet formally adopted, as listed on the JNCC's SAC list.
[5] SCIs are sites that had been adopted by the European Commission before the day of the UK's exit from the EU (31 January 2020) but not yet formally designated as SACs by the UK Government.
[6] As listed in the site's citation on the JNCC website (all features of European importance, both primary and non-primary, need to be considered).
[7] As identified in sections 3.1, 3.2 and 4.2 of the SPA's standard data form on the JNCC website; species for which the site assessment of population (abbreviated to 'Pop.' in table at section 3.1 and 3.2) is 'D' (non-significant population) are not qualifying features and are only relevant to the HRA if qualifying features are dependent on them. Information from SAC and Spa Standard Data Forms is also published by the JNCC in the 'Natura 2000 site details - spreadsheet'. At sites where there remain differences between species listed in the 2001 SPA Review and the extant site citation in the standard data form, the relevant country agency (Natural England or Natural Resources Wales) should be contacted for further guidance.
[8] As set out in section 14 of the relevant 'Information Sheet on Ramsar Wetlands' available on the JNCC website.
[9] UK Government Planning Practice Guidance, available from https://www.gov.uk/guidance/appropriate-assessment
[10] 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.
(2006) Planning for the Protection of European Sites: Appropriate Assessment
[12] RSPB (2007) The Appropriate Assessment of Spatial Plans in England. A guide to why, when and how to do it.

Table 1.1: Stages of HRA

Stage	Task	Outcome
Stage 1: HRA Screening	Description of the development plan. Identification of potentially affected European sites and factors contributing to their integrity. Review of other plans and projects. Assessment of likely significant effects of the development plan alone or in combination with other plans and projects.	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment (where Stage 1 does not rule out likely significant effects)	Information gathering (development plan and European Sites). Impact prediction. Evaluation of development plan impacts in view of conservation objectives. Where impacts are considered to affect qualifying features, identify how these effects will be avoided or reduced.	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 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.

1.14 In assessing the effects of the Local Plan in accordance with the Conservation of Habitats and Species Regulations 2017[13], there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed, if necessary, by an Appropriate Assessment which will inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 105(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not –
- Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on the site, either alone or in combination with other plans or projects (the 'Significance Test'). [These two steps are undertaken as part of Stage 1: Screening shown in **Table 1.1** above.] If Yes –
- Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 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 1.1**.
- 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 will not adversely affect the integrity of the European site.

1.15 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 avoidance of likely significant effects at Stage 1, and through Appropriate Assessment at Stage 2 by 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 Government (and European Commission during the Brexit transition period).

[13] SI No. 2017/2012

1.16 When preparing its Local Plan, Winchester City Council is required by law to carry out an HRA. Winchester City Council 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 Winchester City Council as the 'competent authority'. Winchester City Council will consider this work and may only progress the Local Plan if it considers that the Plan will not adversely affect the integrity[14] of any European site. The requirement for authorities to comply with the Habitats Regulations when preparing a Local Plan is also noted in the Government's online Planning Practice Guidance (PPG).

1.17 The HRA also requires close working with Natural England as the statutory nature conservation body[15] in order to obtain the necessary information, agree the process, outcomes and mitigation proposals. The Environment Agency, while not a statutory consultee for the HRA, is also in a strong position to provide advice and information throughout the process as it is required to undertake HRA for its existing licences and future licensing of activities.

Recent case law changes

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

1.19 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.

1.20 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 could result in likely significant effects on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

1.21 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.

1.22 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 land, 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, will also been fully considered in the HRA.

[14] 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)
[15] Regulation 5 of the Habitats Regulations 2017.

Previous HRA work

1.23 HRA of the Local Plan Part 1 was undertaken in 2012[16], which assessed the policies and development locations set out in the Core Strategy.

1.24 In 2015, HRA Screening[17] was undertaken for the Pre-Submission Local Plan Part 2: Development Management and Site Allocations, which identified locations for development within Winchester City Council's existing Development Plan. Note that the Development Management and Site Allocations covered the whole of the district, whereas the emerging Local Plan excludes the South Downs National Park area.

1.25 Natural England was consulted on a draft of the HRA Screening report and agreed[18] in 2015 that "*none of the policies/allocations in the Draft Local Plan Part 2 are likely to have a significant effect either alone or in combination on the identified European sites; therefore, an Appropriate Assessment is not required*".

1.26 Although the 2014 Screening Report provides useful background information for the current HRA work, this Scoping Report revisits some of the information within it, to ensure that data sources are as up to date as possible, to reflect the revised Plan area, and to acknowledge the latest HRA case law. In particular, the 'People Over Wind' judgement, which requires that mitigation is not taken into account during the screening process.

Structure of this report

1.27 This chapter (**Chapter 1**) has described the background to the production of the Winchester District Local Plan and the requirement to undertake HRA. The remainder of the report is structured into the following sections:

- **Chapter 2** describes the approach that will be taken to the HRA of the Local Plan including the specific tasks that will be undertaken and the assumptions that will underpin the HRA judgements made.
- **Chapter 3** identifies the European sites in and around Winchester that could be affected by the Local Plan and summaries the key issues that will need to be considered during the HRA.
- **Chapter 4** describes the next steps that will be carried out in the HRA of the Local Plan.

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

- **Appendix A** sets out detailed information about the European sites that will be the focus of the HRA.
- **Appendix B** presents an initial review of other plans and projects that could have significant effects on European sites in combination with the Local Plan.

[16] HRA of Part 1 Local Plan, 2012: https://www.winchester.gov.uk/assets/attach/4413/3.6-habitat-regulations-assessment-of-submission.pdf
[17] HRA Screening of Part 2 Local Plan, 2015: https://www.winchester.gov.uk/assets/attach/3858/sub5-hra-pre-submission-lpp2-september-2015-v2-for-web.pdf
[18] As set out in Appendix 6 of the HRA Screening of Part 2 Local Plan, 2015: https://www.winchester.gov.uk/assets/attach/3858/sub5-hra-pre-submission-lpp2-september-2015-v2-for-web.pdf

Chapter 2
Approach to HRA

An explanation of the HRA process

2.1 This chapter describes the approach that will be taken to the HRA of the Winchester District Local Plan throughout its development including the specific tasks that will be undertaken and the assumptions that will underpin the HRA judgements made.

Screening methodology

2.2 As required under the Conservation of Habitats and Species Regulations 2017[19], an assessment of the 'likely significant effects' of the Local Plan will be undertaken. This will be undertaken once Winchester has prepared the Regulation 18 Draft Plan for public consultation setting out policies and allocations that define the type, scale and location of development.

2.3 The Habitats Regulations require screening to involve the stages outlined in **Table 1.1**.

2.4 Local Plans fall within the scope of the Habitats Regulations (screening stage 1; see paragraph 1.5) and Winchester City Council is the competent authority with regards to screening the Local Plan (screening stage 8).

2.5 The methodology for the remainder of the stages is described below.

[19] SI No. 2017/2012

Table 2.1:

Regulation	Stage required by Regulation
Reg. 63(1) (general provisions for screening) and Reg. 105 (1) (specific to land use plans)	1) Determine whether the plan or project is within the scope of the Habitats Regulations
	2) Determine whether the plan or project is of a type that could possibly have any (positive or negative) effect on a European site
	3) Determine whether the plan or project is directly connected with or necessary to the management of the European sites potentially affected
	4) Identify the European sites potentially adversely affected and their conservation objectives
	5) Determine whether the plan or project is likely to have a significant adverse effect on any European site alone
	6) Determine whether the plan or project is likely to have a significant adverse effect on any European site in combination with other plans or projects
Reg. 63(2)	7) Requires the information necessary to decide whether the plan or project would be likely to have a significant adverse effect on a European site either alone or in combination with other plans or projects
Reg. 67	8) Coordination where more than one competent authority is involved in screening the plans or projects

Identifying types of potential impact from the Local Plan

2.6 In our experience, and based on previous comments from Natural England, 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;
- **Fragmentation or severance of habitats** e.g. from development between a European site and functionally-linked sites;
- **Non-physical disturbance** e.g. noise, vibration or light from construction or development in close proximity to sensitive species;
- **Recreation pressure and urban edge effects** e.g. dog walking, cycling, trampling, littering, fire, or predation by pets;
- **Air pollution** 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.

2.7 Further consideration of the types of impact that could be relevant to the Winchester District Local Plan is provided in **Chapter 3**.

Identifying European sites that may be affected

2.8 Geographical Information Systems (GIS) data will be used to map the locations and boundaries of European sites using publicly available data from Natural England. All European sites lying partially or wholly within 15 km of the Local Plan boundary will be included, to reflect the fact that policies in the Local Plan may affect European sites that are located outside of the administrative boundary of the Plan. The 15 km distance has been agreed with Natural England for HRAs elsewhere and is considered a precautionary method of identifying European sites that could potentially be affected by development. Nevertheless, a check will be made to identify any further-distant European sites that could be significantly affected by development within the district due to pathways or links (e.g. hydrological or ecological) with the Plan area.

2.9 Detailed information about the location, qualifying features and vulnerabilities of the European sites included in the assessment will be provided. The attributes that contribute to and define the integrity of the European sites will be identified using the Conservation Objectives for each site, Standard Data Forms for SACs and SPAs and Information Sheets for Ramsar Wetlands , as well as Natural England's Site Improvement Plans (SIPs). This will enable the European

site interest features to be identified, along with the features of each site that determine site integrity and the specific sensitivities and threats facing the site.

2.10 This approach is also useful for informing the inter-dependencies of non-qualifying species and habitats which the qualifying species depend, as recently highlighted as a requirement by the 'Holohan' ruling.

2.11 Further information on European sites that could be affected by the Local Plan is provided in **Chapter 3** and **Appendix A**.

Assessment of 'likely significant effects' of the Local Plan

2.12 Regulation 105(1) of the Conservation of Habitats and Species Regulations 2017[20] (the 'Habitats Regulations'), requires an assessment of the 'likely significant effects' of a land use plan. 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 would have a significant effect on the integrity of a European site.

2.13 A screening matrix will be prepared, which will consider the potential for likely significant effects resulting from each policy and site allocation in the Local Plan. A 'traffic light' approach will be used in the screening matrix to record the likely effects of the policies and site allocations on European sites and their qualifying habitats and species, using the colour categories shown below.

Table 2.2: Screening categories

Colour	Screening conclusion
Red	There are likely to be significant effects (scoped-in to Appropriate Assessment).
Amber	There may be significant effects, but this is currently uncertain (scoped-in to Appropriate Assessment).
Green	There are unlikely to be significant effects (scoped out of Appropriate Assessment).

2.14 Relevant case law helps to interpret when effects should be considered as a likely significant effect, when carrying out HRA of a land use plan.

2.15 In the Waddenzee case[21], the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive (translated into Regulation 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).

2.16 A relevant opinion (the 'Sweetman' case) delivered to the Court of Justice of the European Union[22] 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."

2.17 This opinion 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 "that have no appreciable effect on the [European] site". In practice such effects could be screened out as having no likely significant effect – they would be 'insignificant'.

2.18 The HRA screening assessment therefore considers whether the Local Plan policies could have likely significant effects either alone or in-combination.

In-combination effects

2.19 Regulation 105(1) 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, even where no likely significant effects are identified for the Local Plan it is necessary to consider whether there may be significant effects in combination with other plans or projects.

2.20 Where the Local Plan is likely to have an effect on its own (due to impact pathways being present), whether significant or not, there may also be the same types of effects

[20] SI No. 2017/2012
[21] *ECJ Case C-127/02 "Waddenzee"* Jan 2004.
[22] *Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala* 22nd Nov 2012.

from other plans or projects that could combine with the Local Plan to produce adverse effects on integrity, and therefore these need to be considered through the Appropriate Assessment stage. Where the screening assessment has concluded that there is no impact pathway between development proposed in the Local Plan and the conditions necessary to maintain qualifying features of a European site, then there will be no in-combination effects to assess.

2.21 The first stage in identifying 'in-combination' effects involves identifying which other plans and projects in addition to the Winchester District Local Plan may affect the European sites that are the focus of this assessment. There are a large number of potentially relevant plans and projects which could be considered. The review therefore focusses largely on planned spatial growth within the authorities adjacent to or near Winchester, because these are the plans most likely to give rise to in-combination effects, for example in relation to water use or recreation pressure, although other plans and projects may also be relevant.

2.22 An initial review has been undertaken (**Appendix B**), which focusses on:

- Local Plans for the South Downs National Park and other local authorities bordering Winchester;
- Hampshire County Council's Local Transport Plan and Minerals & Waste Plan;
- Spatial strategy for the South Hampshire authorities (Partnership for South Hampshire; PfSH);
- Neighbourhood plans within Winchester; and
- Southern Water's Water Resources Management Plan.

2.23 The potential for the effects of these plans to combine with the effects of the Local Plan will be considered in the HRA screening and any subsequent Appropriate Assessment. At each iteration of the HRA reporting, the list of other plans and projects with the potential for in-combination effects will be reviewed to ensure that the latest information is taken into account.

Appropriate Assessment

2.24 Following the screening stage, if likely significant effects on European sites are unable to be ruled out, the plan-making authority is required to make an 'Appropriate Assessment' of the implications of the plan for European sites, in view of their conservation objectives. EC Guidance[23] 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.

2.25 The Appropriate Assessment stage of HRA focuses on those impacts judged likely at the Screening stage to have a significant or uncertain effect, and seeks to conclude whether, in light of mitigation and avoidance measures, they would result in an adverse effect on the on the integrity of the qualifying features of a European site(s), or where insufficient certainty regarding this remains.

Assessing the effects on site integrity

2.26 The integrity of a site depends on the site being able to sustain its 'qualifying features' across the whole of the site and 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.

2.27 A conclusion needs to be reached as to whether or not the Local Plan would adversely affect the integrity of a European site. As stated in the EC Guidance, assessing the effects on the site(s) integrity involves considering whether the predicted impacts of the Local Plan 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

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

- Result in the loss of key features.

2.28 The conservation objectives for each European site (**Appendix A**) 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.

2.29 For each European site where an uncertain or likely significant effect has been identified in relation to the Local Plan, the potential impacts have been 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
Scope of HRA

Proposed scope of our assessment

3.1 This chapter identifies and describes the European sites that have the potential to be affected by development proposed within the Winchester District Local Plan and key pathways by which they could be affected.

3.2 It is proposed that these sites and potential impact pathways form the basis of the HRA screening and Appropriate Assessment (if needed) of the Local Plan. Any additional sites or types of impact that are identified during the HRA process would also be assessed fully.

Scoping questions:

- Do you consider we have correctly identified the European sites and key issues that will need to be assessed in the HRA of the Winchester District Local Plan; or
- Are there other sites or key issues we should consider?

European sites that may be affected by the Local Plan

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

3.4 As set out in **Chapter 2**, a distance of 15km has been used to identify European sites likely to be affected by impacts relating to development in the Plan area. However, in addition, consideration has also been given to European sites that may be connected to the Plan area beyond this distance, for example through hydrological pathways or recreational visits by residents. No sites beyond 15km are considered to have connectivity to the Plan area.

3.5 European sites proposed for inclusion in the HRA are listed below in **Table 3.1** below and **table 3.1**. Detailed information about each site is provided in **Appendix A**.

Table 3.1: European sites within 15km of the Plan area

European site	Site description (summarised from Site Improvement Plans[24] and Conservation Objectives[25])
Within the Plan area	
River Itchen SAC	The River Itchen is one of the 'classic' chalk rivers of southern England and supports an abundant and exceptionally species-rich aquatic flora. It is notified for its river habitat and watercourses. Parts of the floodplain are notified for their wetland habitat, and the river discharges via Southampton Water into the Solent which has a range of habitat designations. Its qualifying features are: rivers with floating vegetation often dominated by water-crowfoot; southern damselfly; white-clawed (or Atlantic stream) crayfish; brook lamprey; atlantic salmon; bullhead; and otter.
Solent & Southampton Water SPA/Ramsar	The Solent is a complex site encompassing a major estuarine system on the south coast of England. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime with double tides, as well as for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive areas of intertidal mudflats, often supporting eelgrass and green algae, saltmarshes and natural shoreline transitions, such as drift line vegetation. All four species of cordgrass found within the UK are present within the Solent and it is one of only two UK sites with significant amounts of the native small cordgrass. The rich intertidal mudflats, saltmarsh, shingle beaches and adjacent coastal habitats, including grazing marsh, reedbeds and damp woodland, support nationally and internationally important numbers of migratory and over-wintering waders and waterfowl as well as important breeding gull and tern populations. The SPA's qualifying features are the following breeding species: Mediterranean gull sandwich tern roseate tern common tern little tern; the following non-breeding species: dark-bellied brent goose; Eurasian teal; ringed plover; black-tailed godwit; and its waterbird assemblage. The Ramsar also recognises the site's wetland habitats (Criterion 1) and assemblage of rare plants and invertebrates (Criterion 2).
Solent Maritime SAC	The SAC is within the Solent and forms part of the Solent & Southampton Water SPA/Ramsar (as described above). Its qualifying features are: sandbanks (slightly covered by seawater all the time); estuaries; intertidal mudflats & sandflats; coastal lagoons; annual vegetation of drift lines; coastal shingle vegetation; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes along the shoreline; and Desmoulin's whorl snail.
Within 5km of the Plan area	
Chichester & Langstone Harbours SPA/Ramsar	The SPA/Ramsar is located on the south coast of England in Hampshire and West Sussex. The large, sheltered estuarine basins comprise of extensive sandflats and mudflats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mudflats are rich in invertebrates and also support extensive beds of algae. The SPA's qualifying features are the following breeding species: sandwich tern; common tern; little tern; the following non-breeding species: dark-bellied brent goose; common shelduck; Eurasian wigeon; Eurasian teal; northern pintail; northern shoveler; red-breasted merganser; ringed plover; grey plover; sanderling; dunlin; bar-tailed godwit; Eurasian curlew; common redshank; ruddy turnstone; and its water bird assemblage. The Ramsar also recognises the site's wetland and intertidal habitats, and black-tailed godwit population.
Emer Bog SAC	The site comprises an extensive valley bog which has been described as unparalleled in lowland England as an example of a young oligotrophic / mesotrophic basin mire, together with associated damp acidic grassland, heathland and developing woodland over Bracklesham Beds in the Hampshire Basin. The bog grades downstream into mature alder carr and upstream into heathland. To the south and west of Emer Bog, the site includes remnants of former common land, now acidic grassland. The invertebrate fauna of the bog and heath is of considerable interest and very large numbers of moths have been recorded. Its qualifying features are: transition mires and quaking bogs.
Portsmouth Harbour SPA	Portsmouth Harbour is a large, industrialised estuary, with internationally and nationally important numbers of birds. Together with the adjacent Chichester and Langstone Harbours, it forms one of the most important sheltered intertidal areas on the south coast of England. Portsmouth Harbour SPA is composed of extensive intertidal mudflats and sandflats with seagrass beds, areas of saltmarsh, shallow coastal waters, coastal lagoons and coastal grazing marsh. At low tide the extensive mudflats are exposed, the water drained by channels and creeks uniting to form a narrow exit into the Solent. The estuarine sediments support rich populations of intertidal invertebrates, which provide an important food source for overwintering birds. Its qualifying features are the following non-breeding species: dark-bellied brent goose; red-breasted merganser; dunlin;

[24] Natural England Site Improvement Plans: http://publications.naturalengland.org.uk/category/6149691318206464
[25] Natural England Conservation Objectives: http://publications.naturalengland.org.uk/category/6528471664689152

European site	Site description (summarised from Site Improvement Plans[24] and Conservation Objectives[25])
	black-tailed godwit.
Solent & Dorset Coast SPA	The SPA is within the Solent (as described above for Solent & Southampton Water SPA/Ramsar), but extends beyond it, along the coast from Lulworth to Bognor Regis. Its qualifying features are the following breeding species: sandwich tern; common tern; little tern.
Solent & Isle of Wight Lagoons SAC	The Solent and Isle of Wight Lagoons SAC on the south coast of England encompasses a series of coastal lagoons, including percolation, isolated and sluiced lagoons. The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna including large populations of three notable species: the nationally rare foxtail stonewort; the nationally scarce lagoon sand shrimp; and the nationally scarce starlet sea anemone. Its qualifying features are: coastal lagoons.
Within 10km of the Plan area	
Butser Hill SAC	Butser Hill SAC is an extensive area of semi-natural dry grassland and dense yew woodlands, with smaller elements of chalk heath, deciduous woodland and mixed scrub. Butser is the highest point in the South Downs National Park and is situated on the chalk which also feeds the Oxenbourne tributary of the River Meon. The topography of the site is varied, with a wide range of slope gradients and aspects, which in turn generate conditions for high diversity of both vascular and lower flora. The lichen flora associated with chalk grassland is considered the richest in England, whilst a distinctive association of liverworts and mosses occurs on the north-facing slopes. The site supports a diversity of butterflies and is notable for its population stronghold of Duke of Burgundy. The calcareous yew woods are outstanding examples of a habitat with a very small representation in Britain. The occurrence of chalk grasslands and yew woodlands, alongside transitional habitat between them, combine to make this site of outstanding nature conservation importance. Its qualifying features are: dry grasslands and scrublands on chalk or limestone; yew-dominated woodland.
East Hampshire Hangers SAC	The East Hampshire Hangers is designated primarily for its examples of beech forests and its mixed woodland associated with base-rich slopes in addition to chalk grassland of importance to orchids, yew forests and its population of Early gentian. The beech forests are extremely rich in terms of vascular plants and include areas with old pollards on former wood-pasture as well as high forest. The sloped mixed woodland is unusual in southern England and notably contains areas of small-leaved lime. The moss flora is richer than on the chalk examples and includes several species that are rare in the lowlands. The Wealden Edge Hangers component of the site contains stands of yew woodland. The chalk grassland at Noar Hill hosts an important population of Early gentian and an outstanding assemblage of orchids, including one of the largest UK populations of Musk orchid. Its qualifying features are: dry grasslands and scrublands on chalk or limestone (important orchid sites); beech forests on neutral to rich soils; mixed woodland on base-rich soils associated with rocky slopes; yew-dominated woodland; and early gentian.
Mottisfont Bats SAC	The Mottisfont woodland, which is near Romsey in Hampshire, supports an important population of the rare Barbastelle bat. Mottisfont contains a mix of woodland types including hazel coppice with standards, broadleaved plantation and coniferous plantation which the bats use for breeding, roosting, commuting and feeding. Its qualifying features are: barbastelle bat.
Within 15km of the Plan area	
Kingley Vale SAC	Kingley Vale is one of the sites representing yew woods on chalk, in the central southern part of its UK range. It has been selected primarily because of its size, as it is the largest area of yew woodland in Britain. In addition to the woodland, four nationally uncommon habitats are represented at the site: chalk grassland; chalk heath; juniper scrub and yew scrub. Its qualifying features are: dry grasslands and scrublands on chalk or limestone; yew-dominated woodland.
New Forest SAC/SPA/ Ramsar	The New Forest is a large and complex ecosystem and one of the largest remaining relatively wild areas in the South of England attracting enormous numbers of visitors each year. The New Forest SAC and SPA supports an extensive and complex mosaic of habitats including wet and dry heaths and associated bogs and mires, wet and dry grasslands, ancient pasture woodlands, frequent permanent and temporary ponds and a network of streams and rivers. These habitats support an exceptional variety of flora and fauna including internationally important populations of breeding and over-wintering birds and other notable species such as southern damselfly, stag beetle and great crested newt. The New Forest is one of the most important sites for wildlife in the UK and is recognised as being of exceptional importance for nature conservation throughout the European Union. Over 90% of the SAC comprises the unenclosed land of the Crown Lands and adjacent commons, the remainder is managed by private owners and occupiers. Of fundamental importance to sustaining the exceptional quality on the open forest is the persistence of commoning, the commoners' stock roam freely maintaining the structural diversity and richness of the habitats complemented by annual heathland cutting and burning programmes.

European site	Site description (summarised from Site Improvement Plans[24] and Conservation Objectives[25])
	The SAC's qualifying features are: nutrient-poor shallow waters with aquatic vegetation on sandy plains; clear-water lakes or locks with aquatic vegetation and poor to moderate nutrient levels; wet heathland with cross-leaved heath; European dry heaths; and purple moor-grass meadows. The SPA's qualifying features are the following breeding species: European honey-buzzard, Eurasian hobby, European nightjar, woodlark, Dartford warbler, wood warbler; and the following non-breeding species: hen harrier. The Ramsar also recognises the site's valley mires and wet heaths (Criterion 1); assemblage of wetland plants and animals (Criterion 2); invertebrates and mire habitat transition zones (Criterion 3).
Porton Down SPA	Part of Salisbury Plain SAC, as described below. Its qualifying features are: stone-curlew (breeding).
Rook Clift SAC	Rook Clift SAC is a forest of slopes, screes and ravines, associated with rocky slopes on the base rich soils of the South Downs. This ancient woodland is dominated by large coppice stools of large-leaved lime, together with ash and some beech. The presence of large-leaved lime as a canopy dominant makes this woodland virtually unique. The site also supports a number of mollusc species, notably the Cheese snail and a rich bryophyte flora. Its qualifying features are: mixed-woodland on base-rich soils associated with rocky slopes.
Salisbury Plain SAC	Salisbury Plain SAC, (which includes Porton Down SPA; above) represents the largest surviving semi-natural dry grassland area within north–west Europe. It hosts the priority habitat type 'orchid-rich sites' and supports extensive areas of broom grassland, which is the most widespread and abundant calcareous grassland found in the UK. Its qualifying features are: Juniper on heaths or calcareous grasslands; Dry grasslands and scrublands on chalk or limestone (important orchid sites); and marsh fritillary butterfly.
Shortheath Common SAC	Shortheath Common SAC is common land situated in East Hampshire and consists of a wide range of wet and dry heathland habitats and bog woodland. The focal point of the site is a substantial valley mire with a rich ground flora of species such as sedges, sundew, cotton grass, and marsh cinquefoil. Bog mosses form a floating raft over much of the mire. The mire is notable for its high cover of cranberry. The site has a diverse dragonfly assemblage. Its qualifying features are: European dry heaths; transition mires and quaking bogs; bog woodland.
Wealden Heaths Phase 2 SPA	This group of heathland sites incorporates Woolmer Forest SAC (see below). The complex includes important military training land as well as popular recreational areas. Its qualifying features are the following breeding species: European nightjar, woodlark, Dartford warbler.
Woolmer Forest SAC	This sites is part of the Wealden Heaths Phase 2 SPA, as above. Its qualifying features are: acid peat-stained lakes and ponds; wet heathland with cross-leaved heath; European dry heaths; transition mires and quaking bogs; depressions on peat substrates.

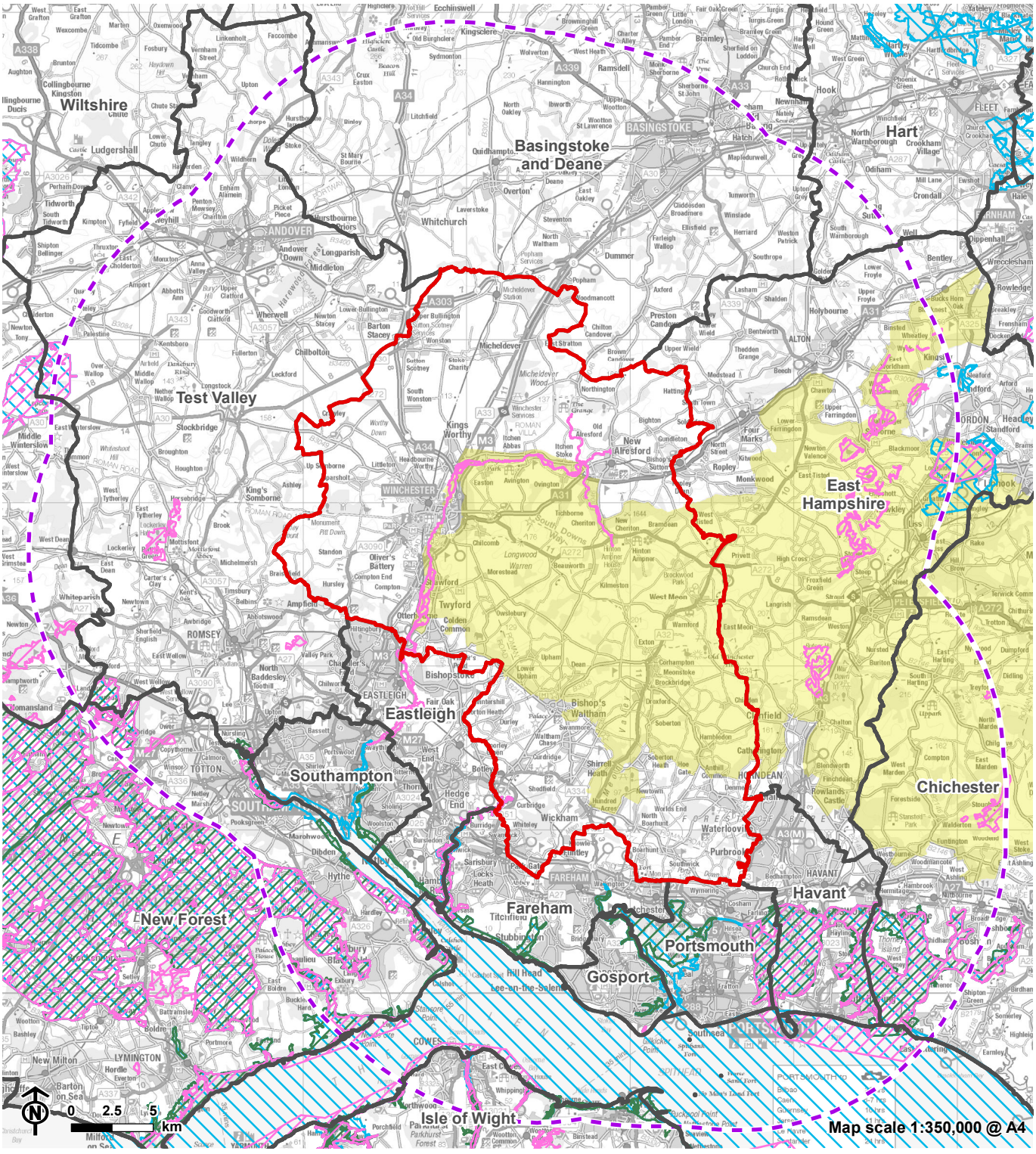

Figure 3.1: European sites with the potential to be affected by the Winchester District Local Plan

- Winchester
- Neighbouring local authority
- South Downs National Park
- Plan area 15km buffer
- Ramsar
- Special Area of Conservation
- Special Protection Area

Ecological attributes of the European sites

3.6 The designated features and conservation objectives of the European sites, together with current pressures on them and potential threats, have been established using the Standard Data Forms for SACs and SPAs and the Information Sheets for Ramsar Wetlands published on the JNCC website[26] as well as Natural England's Site Improvement Plans[27] (SIPs) and the most recent conservation objectives published on the Natural England website[28].

3.7 **Table 3.2** summarises the key sensitivities of European sites within 15km of the Plan area, for the types of impacts that could arise from the Local Plan, based on the qualifying features and SIPs. Physical loss or damage of habitats or species, and fragmentation or severance, could affect any of the European sites and those with functionally-linked habitats, so are not included in the table. Functionally-linked habitats may be relevant to European sites with mobile qualifying species (e.g. birds, bats, fish or invertebrates).

3.8 The HRA will also consider the inter-dependencies of non-qualifying species and habitats which the qualifying species depend, as recently highlighted as a requirement by the 'Holohan' ruling.

[26] www.jncc.defra.gov.uk
[27] http://publications.naturalengland.org.uk/category/5458594975711232
[28] http://publications.naturalengland.org.uk/category/6490068894089216

Table 3.2: Sensitivities of European sites

European site	Non-physical disturbance	Recreation pressure	Water quality / quantity	Air pollution	Functionally-linked land may be relevant
Butser Hill SAC		●		●	
Chichester & Langstone Harbours SPA / Ramsar	●	●	●	●	●
East Hampshire Hangers SAC		●			
Emer Bog SAC				●	
Kingley Vale SAC				●	
Mottisfont Bats SAC	●	●			●
New Forest SAC / SPA / Ramsar	●	●			●
Porton Down SAC	●				●
Portsmouth Harbour SPA / Ramsar	●	●	●		●
River Itchen SAC	●		●		●
Rook Clift SAC					
Salisbury Plain SAC				●	
Shortheath Common SAC		●		●	
Solent & Dorset SPA[29]	●	●	●	●	●
Solent & Isle of Wight Lagoons SAC		●	●		
Solent & Southampton Water SPA / Ramsar	●	●	●		●
Solent Maritime SAC			●	●	
Wealden Heaths Phase 2 SPA	●	●			●
Woolmer Forest SAC			●	●	

[29] A Site Improvement Plan (SIP) is not yet available for the Solent and Dorset SPA. These are taken from the Solent SIP

Potential broad impacts from the Local Plan

3.9 **Chapter 2** introduced the impacts that can arise from the types of development proposed by Local Plans. This section of the report considers which types of impact are likely to be a key consideration for the Winchester District Local Plan, given the sensitivities of the European sites within and near the Plan area and the potential impact pathways.

3.10 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 described below.

Recreation pressure and urban edge effects

3.11 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.

3.12 The Local Plan will result in housing growth and an associated population increase. 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, once the overall number of homes and potential location of development is known.

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

3.14 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.

3.15 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). For example, Wealden Heaths Phase 2 SPA lies c.14km to the east of the district and is sensitive to visitor pressure. However, a visitor survey[30] for the SPA and surrounding sites has found that the average travel distance from home to site is 6.7km and 70% of visitors travel from within 4.3km. Development within the Plan area is therefore unlikely to result in a significant increase in visitors to Wealden Heaths Phase 2 SPA.

3.16 ZOIs 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. Particularly in relation to coastal European sites or large sites such as the New Forest, which have the potential to draw large number of visitors from areas much further afield. In some cases, functionally-linked habitats used by qualifying species can also be affected by recreation pressure and urban edge effects.

3.17 The HRA will consider data available for the European sites identified as sensitive to recreation pressure and urban edge effects, to establish ZOIs for the sites and the potential for effects on functionally-linked habitats. We will then use GIS to identify whether the catchments of those sites include potential locations for residential development within the Plan area.

Changes in water quantity and quality

3.18 An increase in demand for water abstraction and treatment, and changes in land use resulting from the growth proposed in the Local Plan could result in changes in hydrology at European sites. Depending on the qualifying features and particular vulnerabilities of the European sites, this could result in likely significant effects; for example due to changes in environmental or biotic conditions, water chemistry and the extent and distribution of preferred habitat conditions. To fully understand the potential impacts of proposed development on European sites a review of relevant Water Cycle Studies (WCS) and liaison with the Environment Agency and relevant water companies will be required.

3.19 Habitats can also be affected by changes in water quality such as nutrient enrichment, changes in salinity, smothering from dust, and run-off, discharge or spillage from industry, agriculture or construction. Changes in water abstraction, discharge and land use can also affect water quality, for example a change in land use from agriculture to residential reduces direct nutrient run-off to watercourses but increases the volume of nutrients discharges from wastewater treatment works.

[30] EPR, Whitehill and Bordon Ecotown HRA visitor survey (2016): https://issuu.com/easthampshire/docs/final_whitehill___bordon_hra_visitor_survey_report

3.20 Natural England's June 2020 guidance[31] on nutrient neutrality for new development in the Solent region states that:

> There are high levels of nitrogen and phosphorus input to [the Solent] with sound evidence that these nutrients are causing eutrophication at these designated sites. These nutrient inputs currently mostly come either from agricultural sources or from wastewater from existing housing and other development. The resulting dense mats of green algae and other effects on the marine ecology from an excessive presence of nutrients are impacting on the Solent's protected habitats and bird species.
>
> There is uncertainty as to whether new [housing] growth will further deteriorate designated sites. This issue has been subject to detailed work commissioned by local planning authorities (LPAs) in association with Natural England, Environment Agency and water companies. This strategic work, which updates early studies, is on-going. Until this work is complete, the uncertainty remains and the potential for future housing developments across the Solent region to exacerbate these impacts creates a risk to their potential future conservation status.
>
> One way to address this uncertainty is for new development to achieve nutrient neutrality. Nutrient neutrality is a means of ensuring that development does not add to existing nutrient burdens and this provides certainty that the whole of the scheme is deliverable in line with the requirements of the Conservation of Habitats and Species Regulations 2017.

3.21 The HRA will therefore need to test whether the policy provisions within the Local Plan are sufficient to enable nutrient neutrality to be achieved for all new development. If they are not, then the specific effects on European sites will need to be assessed.

3.22 European sites with potential to be affected by changes in water quantity or quality are likely to be sites that lie within the Plan area or those that are hydrologically connected to areas of development provided for by the plan.

3.23 The Rivers Test, Itchen and Meon all flow through the Plan area and into Southampton Water and the Solent. The River Itchen SAC and all of the marine and coastal European sites therefore have the potential to be affected by changes in water quality or quantity, particularly nutrient enrichment, and will be assessed in the HRA. The wetland habitats at Woolmer Forest SAC (the only terrestrial SAC sensitive to changes in water quantity/quality) are unlikely to be hydrologically connected to the Plan area.

Air pollution

3.24 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 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 levels, which can then affect plant health, productivity and species composition.

3.25 In terms of vehicle traffic, nitrogen oxides (NOx, 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 NOx can cause eutrophication of soils and water.

3.26 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) guidance document LA105 Air Quality[32] (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 200m from the road itself. Where increases in traffic volumes are forecast, this 200m buffer needs to be applied to the relevant roads in order to make a judgement about the likely geographical extent of air pollution impacts.

3.27 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied at the Screening Stage of an assessment of a plan or project, to ascertain whether there are likely to be significant impacts associated with routes or corridors. Based on the DMRB guidance, affected roads which should be assessed are those where:

- Daily traffic flows will change by 1,000 AADT (Annual Average Daily Traffic) or more; or
- Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or
- A change in speed band; or
- Road alignment will change by 5m or more.

3.28 Where significant increases in traffic are possible on roads within 200m of European sites (or in some cases functionally-linked habitats), traffic forecast data may be needed to determine if increases in vehicle traffic are likely to

[31] Natural England guidance on achieving nutrient neutrality in the Solent Region (June 2020): https://www.push.gov.uk/2020/06/11/natural-england-published-nutrient-calculator-and-updated-guidance-on-achieving-nutrient-neutral-housing-development/

[32] DMRB (2019) LA 105 Air Quality: https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

be significant. In line with the Wealden judgement [33], the traffic growth considered by the HRA should be based on the effects of development provided for by the Local Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

3.29 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) are likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT). As such, where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

3.30 For each of the European sites identified as being sensitive to air pollution, we will use GIS to assess whether they (or their functionally-linked habitats, if relevant) are within 200m of a major road. In some cases, we may be able to screen out sites if it is obvious that significant volumes of traffic from the Plan area are unlikely to pass the site (for example using data[34] on commuting patterns).

3.31 If significant effects due to air pollution, either alone or in-combination, cannot be ruled out, the Appropriate Assessment will assess the effects of the Plan on European sites with reference to traffic data and site relevant critical loads[35].

Physical loss of or damage to habitats

3.32 Any development resulting from the Local Plan would take place within the Plan area; therefore only European sites (or functionally-linked habitats) within Winchester District but outside the South Downs National Park could be affected through physical damage or loss of habitat from within the site boundaries. Only the River Itchen SAC and a small part of the Solent & Southampton Water SPA/Ramsar and Solent Maritime SAC are within the Plan area.

3.33 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 foraging or roosting habitat for birds or bats, and spawning grounds for fish.

3.34 The HRA will consider the qualifying features of the European sites and the distance within which functionally-linked habitat could be important to the integrity of the sites. The HRA will then assess the potential for the Local Plan to affect those sites.

Fragmentation and severance

3.35 Fragmentation and severance may be caused by physical loss of habitats, but may also be caused by development that impedes the movement of species between two areas of habitat, for example roads or brightly lit areas.

3.36 Only European sites or functionally-linked habitat within the Plan area could be affected by fragmentation and severance arising from the Local Plan. As noted above, only the River Itchen SAC and a small part of the Solent & Southampton Water SPA/Ramsar and Solent Maritime SAC are within the Plan area. Fragmentation or severance affecting the qualifying features of the River Itchen SAC could only be caused by physical loss of or damage to the river habitats within or upstream of the European site; fragmentation / severance will therefore not be considered as a separate effect in relation to this site. Similarly, fragmentation or severance affecting the Solent & Southampton Water SPA/Ramsar could only occur in relation to functionally-linked habitat.

3.37 The potential for fragmentation or severance will therefore only be considered in relation to sites with functionally-linked habitat within the Plan area.

Non-physical disturbance

3.38 Noise and vibration effects, e.g. during the construction of new housing or employment 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. Artificial lighting at night (e.g. from street lamps, flood lighting and security lights) has the potential to affect species where it occurs in close proximity to key habitat areas, such as key roosting sites of SPA birds.

3.39 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 metres of a European site with qualifying features sensitive to these disturbances.

3.40 Scoped in European sites that support qualifying species which are therefore vulnerable to non-physical disturbance are the River Itchen SAC and Solent & Southampton Water SPA/Ramsar. The HRA will consider the potential for the Local Plan to affect these sites.

[33] Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC 351
[34] UCL DataShine Commute data: https://commute.datashine.org.uk/
[35] Air Pollution Information System (APIS) data: http://www.apis.ac.uk/

Chapter 4
Next Steps

The next stages in the HRA and Plan-making process

4.1 This document has been produced to provide guidance for developing the Winchester District Local Plan in the context of European sites and as a reference point for stakeholders wishing to comment on the scope of the HRA.

4.2 This document will be subject to consultation with Natural England to confirm that the proposed scope of the assessment is considered appropriate. This HRA Scoping Report is also being published for public consultation for a five week period from 8th July 2020.

4.3 Consultees are in particular requested to consider the following:

- Have we correctly identified the European sites that should be scoped-in to the HRA of the Local Plan (see **Chapter 3**)?
- Have we correctly identified the sensitivities of the scoped-in European sites to potential impacts from the Local Plan (see **Chapter 3** and **Appendix A**)?
- Are there other plans or major projects that we should take into account in the assessment of potential in-combination effects (**Appendix B**)?
- Is the proposed approach to HRA of the Local Plan reasonable (**Chapter 2**)?

4.4 Responses from consultees will be reviewed and any appropriate amendments made to the approach to and information within the HRA at the next stage.

4.5 Once Winchester City Council has produced the Regulation 18 version of the Local Plan, this will be subject to HRA in line with the methodology described in **Chapter 2** and scope set out in **Chapter 3.**

4.6 The HRA report will be updated as required throughout the preparation of the Local Plan, with the HRA report relating to each iteration of the Local Plan being published during consultation periods. Specific consultation will be undertaken with Natural England throughout as the statutory consultation body for HRA.

Appendix A

Attributes of European Sites with the potential to be affected by the Local Plan

Table A.1: Attributes of Butser Hill SAC

Site name (Area, ha)	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Butser Hill SAC - is an extensive area of semi-natural dry grassland and dense yew woodlands, with smaller elements of chalk heath, deciduous woodland and mixed scrub. It is located within the South Downs National Park, in the east of Hampshire. Butser is the highest point in the National Park and is situated on the chalk which also feeds the Oxenbourne tributary of the River Meon. The chalk grassland component of the site is primarily CG2 *Festuca ovina – Avenula pratense* grassland, grazed by sheep and rabbits. The topography of the site is varied, with a wide range of slope gradients and aspects, which in turn generate conditions for high diversity of both vascular and lower flora. The lichen flora associated with chalk grassland is considered the richest in England, whilst a distinctive association of liverworts and mosses occurs on the north-facing slopes.			
Butser Hill SAC (237.36 ha)	*Qualifying features:* – H4030 European dry heaths – H6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) – 91J0 *Taxus baccata* woods of the British Isles *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: – 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.	**Inappropriate scrub control** In some localised areas, chalk grassland is suffering from significant encroachment by bramble, gorse and other scrub, and there are indications that its extent is declining. Shading effects from expansion of woodland and scrub will also cause a reduction in diversity in the sward. **Under grazing** Condition assessment of some areas suggested that there were distinct areas where the sward height was tussocky and above target. Also, higher than target levels of leaf litter were reported. This suggests that grazing is uneven, or limited, across the site. The importance of rabbits as a grazing animal is noted, but the population has declined markedly due to disease outbreaks. Uneven grazing carries the risk of the sward becoming too tall and grass-dominated, shading out the forbs that are characteristic of the chalk grassland sward. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads for the *Taxus baccata* woodlands and is approaching the upper critical load in the chalk grassland. Nitrogen enrichment impacts for chalk grassland can include: increase in tall grasses; decline in diversity; increased mineralisation; N leaching and surface acidification. Nitrogen enrichment impacts for *Taxus baccata* woodland include:	Natural England's Conservation Objectives: Supplementary Advice for this site[36] identify the following dependencies: *Festuco-Brometalia* grasslands require thin, well-drained, lime-rich soils associated with chalk and limestone. Most of these calcareous grasslands are maintained by grazing (to control scrub). Yew woodland requires shallow, dry soils usually on chalk or limestone slopes, but in a few areas stands on more mesotrophic soils are found. These habitats are associated with a community of plant species, which need to be maintained as components of the qualifying habitats. Supporting offsite habitat is relevant to this site: Additional areas of calcareous grassland and other species rich grasslands occur near to the SAC. These need to be maintained to support wider populations of the species that characterise the SAC and maintain the resilience of the habitat.

[36] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Butser Hill: http://publications.naturalengland.org.uk/publication/5067404384141312

Site name (Area, ha)	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		changes in soil processes; nutrient imbalance; altered composition mycorrhiza and ground vegetation. Overall, this creates conditions less favourable to the characteristic vegetation of the SAC features. However, as the sensitive features (*Taxus baccata* woodlands) are considered to be in favourable condition this requires further investigation to determine the significance level of the threat.	

Table A.2: Attributes of Chichester & Langstone Harbours SPA/Ramsar

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Chichester and Langstone Harbours SPA/ Ramsar - Chichester and Langstone Harbours Special Protection Area (SPA) is located on the south coast of England in Hampshire and West Sussex. The large, sheltered estuarine basins comprise of extensive sandflats and mudflats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mudflats are rich in invertebrates and also support extensive beds of algae, especially, eelgrasses (*Zostera* spp.) and Enteromorpha species.			
Chichester and Langstone Harbours SPA (5,810.95 ha)	*Qualifying features:* – A157 Bar-tailed godwit *Limosa lapponica,* Non-breeding – A193 Common tern *Sterna hirundo*, Breeding – A160 Curlew *Numenius arquata*, Non-breeding – A675 Dark-bellied brent goose *Branta bernicla bernicla*, Non-breeding – A672 Dunlin *Calidris alpina* alpina, Non-breeding – A141 Grey plover *Pluvialis squatarola*, Non-breeding – A195 Little tern *Sternula albifrons*, Breeding – A054 Pintail *Anas acuta*, Non-breeding – A069 Red-breasted merganser *Mergus serrator*, Non-breeding *Conservation objectives:* 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; – The extent and distribution of the	**Public Access/Disturbance** Recreational activities can affect annual vegetation of drift lines (H1210) and the vegetation of stony banks (H1220). **Coastal squeeze** Habitats are being lost as they are squeezed between rising sea levels and hard coastal defences that are maintained. There is a direct impact due to loss of the SAC habitats such as saltmarsh. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands. The habitats that are lost could be created elsewhere, but there is difficulty in finding suitable areas. The neutral grassland habitats will take a long time to create as mitigation, but intertidal habitat can be created relatively quickly. Current compensation provides required habitat for Epoch 1 of the Shoreline Management Plan 2, further investigation is required for Epoch 2 and 3. This project will utilise outputs from Shoreline Management Plans, the Environment Agency's Regional Habitat Creation Project and the New Forest District Council/Channel Coastal Observatory's Solent Dynamic Coast Project. **Fisheries: Commercial marine and estuarine** Towed gear, hand gathering of shellfish, bait digging and aquaculture are the main fishery activities in this site. **Water pollution** Water pollution affects a range of habitats at the site through eutrophication and toxicity. Sources include both point source discharges (including flood alleviation / storm discharges) and diffuse water pollution from agriculture / road runoff, as well as historic contamination of marine sediments, primarily from copper and Tributyltin (TBT). A position statement from the Environment Agency and Natural England on water quality in the Solent and housing growth confirms the need to control nitrogen inputs to the Solent from development growth. Environment Agency flood event discharge	In general, the qualifying bird species of the SPA rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. There is no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	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.	consents allow untreated waters to be discharged which end up in the SAC and are likely to have a negative impact. There is a threat of spillage from oil transportation and transfer and by the usage by ships and pilotage. **Climate change** Climate change has impacts upon coastal species, in that gull and tern colonies are more frequently washed out with raising sea levels when storm surges cause flooding to habitats. **Changes in species distributions** Areas of saltmarsh are eroding and decreasing. **Change to site conditions** There is an increasing loss of saltmarsh in much of the Solent for reasons unknown, and this needs to be investigated. **Invasive species** The highest risk pathways through which marine INNS are introduced and then spread have been identified as: commercial shipping (through release of ballast water, and biofouling on hulls); recreational boating (through biofouling on hulls); aquaculture (through contamination of imported or moved stock - or escaped stock in the case of the pacific oyster), and natural dispersal. **Biological Resource Use** Gull egg collecting occurs in some places, and wildfowling occurs in several places. These activities are likely to be disturbing to breeding and wintering birds even though they are licenced/consented at the moment. **Change in land management** Changes to land management are likely to occur in areas where tidal flaps/sluices are altered and this results in changes to water levels or salinity of that land. Some sluices are failing, which may also result in changes to water levels or salinity of land. Some ditches and drains are neglected and this can cause difficulties in land management, resulting in changes. **Inappropriate pest control** Predator control is decreasing, resulting in increased predation by foxes etc.	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		and this is the likely cause of decrease in successful breeding of gulls and terns. **Air Pollution: Impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. Locally observed effects are unknown. **Direct impact from 3rd party** Off-roading is causing damage to some areas of grassland. Private sea defences are causing disruption to the natural movement processes of natural materials along the coast. House boats are unlicensed and have the potential to cause damage to intertidal habitats. Fly grazing is causing issues affecting large areas of Chichester Harbour. **Other** SAC boundary may not cover the extent of all Annex 1 and Annex 2 features and/or supporting habitats.	
Chichester and Langstone Harbours Ramsar (5,810.03 ha)	*Qualifying features:* **Ramsar Criterion 1** Two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The site includes intertidal mudflats, saltmarsh, sand and shingle spits and sand dunes. **Ramsar Criterion 5** Assemblages of international importance: Species with peak counts in winter: – 76480 waterfowl (5-year peak mean 1998/99-2002/2003) **Ramsar criterion 6** Species/populations occurring at levels of international importance.	**Erosion** Coastal Defence Strategies, regulation of private coastal defences, shoreline management plans are in place or are being developed. Some larger-scale saltmarsh re-creation projects, beneficial usage of maintenance dredgings and managed realignment scheme to offset losses to coastal squeeze have been proposed. **Eutrophication** No information available. **Pollution – domestic sewage** No information available.	In general, the qualifying bird species of the Ramsar site rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	Qualifying Species/ populations (as identified at designation): Species with peak counts in spring/autumn: – Ringed plover *Charadrius hiaticula*, Europe/Northwest Africa – Black-tailed godwit *Limosa limosa islandica*, Iceland/W Europe – Common redshank *Tringa totanus totanus*, Species with peak counts in winter: – Dark-bellied brent goose, *Branta bernicla bernicla* – Common shelduck *Tadorna tadorna*, NW Europe – Grey plover *Pluvialis squatarola*, E Atlantic/W Africa -wintering – Dunlin *Calidris alpina alpina*, W Siberia/W Europe Species/populations identified subsequent to designation for possible future consideration under criterion 6: Species regularly supported during the breeding season: Little tern *Sterna albifrons albifrons*, W Europe		

Table A.3: Attributes of East Hampshire Hangers SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
East Hampshire Hangers SAC - The East Hampshire Hangers is designated primarily for its examples of beech forests and its mixed woodland associated with base-rich slopes in addition to chalk grassland of importance to orchids, yew forests and its population of Early gentian. The beech forests are extremely rich in terms of vascular plants and include areas with old pollards on former wood-pasture as well as high forest. The sloped mixed woodland is unusual in southern England and notably contains areas of small-leaved lime. The moss flora is richer than on the chalk examples and includes several species that are rare in the lowlands. The Wealden Edge Hangers component of the site contains stands of yew *Taxus baccata* woodland.			
East Hampshire Hangers SAC (561.69 ha)	*Qualifying features:* – H9130 *Asperulo-Fagetum* beech forests – H9180 *Tilio-Acerion* forests of slopes, screes and ravines * Priority feature – H6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) – H91J0 *Taxus baccata* woods of the British Isles * Priority feature *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: – The extent and distribution of qualifying natural habitats and habitats of qualifying species; – The structure and function (including	**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 generally considered to be in favourable condition on the site (those few that are unfavourable are unfavourable for specific reasons unrelated to nitrogen). This requires further investigation. **Invasive species** A non-native hybrid ivy is smothering out the ground flora and spreading in one of the hangers. **Forestry and woodland management** A small portion of the SAC is in unfavourable condition due to lack of understorey. Attempts at providing regeneration have been poorly implemented and in addition parts of this area are thick with ruderal vegetation.	Natural England's Conservation Objectives: Supplementary Advice for this site[37] identify the following dependencies: *Festuco-Brometalia* grasslands require thin, well-drained, lime-rich soils associated with chalk and limestone. Most of these calcareous grasslands are maintained by grazing (to control scrub). *Asperulo-Fagetum* beech forests require circumneutral to calcareous soils. Each community has a different associated suite of species which change according to slope and soil type. *Tilio-Acerion* ravine forests are woods of ash, wych elm and lime. The habitat type typically occurs on nutrient-rich soils that often accumulate in the shady micro-climates towards the bases of slopes and ravines. These habitats are all associated with a community of plant species, which need to be maintained as components of the qualifying habitats. Early gentian requires bare ground or in thin turf that is kept open by a combination of rabbit or sheep-grazing and trampling by livestock on thin droughted soils. Supporting offsite habitat is relevant to this site: Additional areas of calcareous grassland and other species rich grasslands occur near to the SAC. These need to be maintained to support wider populations of the species that characterise the SAC and maintain the resilience of the habitat.

[37] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features East Hampshire Hangers SAC: http://publications.naturalengland.org.uk/publication/6500658190483456

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	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.		

Table A.4: Attributes of Emer Bog SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Emer Bog SAC - The site comprises an extensive valley bog together with associated damp acidic grassland, heathland and developing woodland over Bracklesham Beds in the Hampshire Basin. Emer Bog SAC is part of the South Hampshire Lowlands National Character Area (NCA 128). Emer Bog is an excellent example of a valley bog with a rich flora and fauna which includes most typical bog species. The main elements of the bog vegetation include a mixed association of sedges, especially white sedge *Carex curta*, bottle sedge *C. rostrata* and star sedge *C. echinata*, with notable quantities of marsh cinquefoil *Comarum palustris* and bogbean *Menyanthes trifoliata*, together with marsh violet *Viola palustris* and southern marsh-orchid *Dactylorhiza praetermissa*. The bog grades downstream into mature alder carr and upstream into heathland.			
Emer Bog SAC (36.76 ha)	*Qualifying features:* – H7140 Transition mires and quaking bogs *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: – The extent and distribution of the qualifying natural habitat; – The structure and function (including typical species) of the qualifying natural habitat; and – The supporting processes on which the qualifying natural habitat rely.	**Public Access/Disturbance** The adoption of the site for informal recreation compounds the difficulties in managing the site, particularly through grazing. **Hydrological changes** There has been a reduction in the area of Sphagnum-rich vegetation and it is thought that this is due to substantial nutrient enrichment encouraging the growth of *Typha*. Although the cause of this is uncertain, a more detailed understanding of site hydrology is likely to help clarify reasons. **Air Pollution: impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. With respect to transition mire excess nitrogen may negatively alter the vegetation community by detrimentally affecting bryophytes and increasing the abundance of sedges and vascular plants.	Natural England's Conservation Objectives: Supplementary Advice for this site[38] identify the following dependencies: Transition mires and quaking bogs can occur in a variety of situations, related to different geomorphological processes: in flood plain mires, valley bogs, basin mires and the lagg zone of raised bogs, and as regeneration surfaces within mires that have been cut-over for peat. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being high, taking into account the sensitivity, fragmentation, topography and management of its habitats. This habitat requires ongoing cutting or grazing maintain its open character. Additionally, other habitats along with land outside the site boundary will need to be managed in such a way as to reverse the current negative impacts to the water chemistry and hydrology of the mire and prevent further issues occurring. Surrounding habitats should also be managed to support the wider populations of the flora and fauna of the mire

[38] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Emer Bog: http://publications.naturalengland.org.uk/publication/4900551749795840

Table A.5: Attributes of Kingley Vale SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Kingley Vale SAC is one of the sites representing yew woods on chalk, in the central southern part of its UK range. It has been selected primarily because of its size, as it is the largest area of yew woodland in Britain. In addition to the woodland, four nationally uncommon habitats are represented at the site: chalk grassland; chalk heath; juniper scrub and yew scrub.			
Kingley Valey SAC (208.05 ha)	*Qualifying features:* – H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates *(Festuco-Brometalia)* – H91J0 *Taxus baccata* woods of the British Isles *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; – The extent and distribution of qualifying natural habitats and habitats – The structure and function (including typical species) of qualifying natural habitats, and – The supporting processes on which qualifying natural habitats rely	**Deer** Large herds of fallow deer present on the site appear to be a large factor in preventing natural regeneration of the yew trees. Surveys carried out in 2013 recorded little or no regeneration of yew. **Undergrazing** Undergrazing is a threat at this site due to the conflicting issues around grazing animals and yew toxicity. **Agriculture** Parts of the site are adjacent to land that is intensively managed for agriculture. This management includes the regular application of fertiliser and pesticide, which, if allowed to come into direct contact with the grassland sward, can destroy the sward entirely or, through the addition of nitrogen cause loss of species diversity. **Air pollution** Nitrogen deposition exceeds site relevant critical loads.	Natural England's Conservation Objectives: Supplementary Advice for this site[39] identify the following dependencies: Yew woodland requires shallow, dry soils usually on chalk or limestone slopes, but in a few areas stands on more mesotrophic soils are found. Semi-natural dry grasslands are generally found on thin, well-drained, lime-rich soils associated with chalk and limestone. These habitats are associated with a community of plant species, which need to be maintained as components of the qualifying habitats. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Securing the uptake of agri-environmental agreements on neighbouring land could serve to improve the quality of the landscape surrounding Kingley Vale.

[39] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Kingley Vale: http://publications.naturalengland.org.uk/publication/5727834794360832

Table A.6: Attributes of Mottisfont Bats SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Mottisfont Bats SAC - The Mottisfont woodland, which is near Romsey in Hampshire, supports an important population of the rare Barbastelle bat *Barbastella barbastellus*. Mottisfont contains a mix of woodland types including hazel *Corylus avellana* coppice with standards, broadleaved plantation and coniferous plantation which the bats use for breeding, roosting, commuting and feeding.			
Mottisfont Bats SAC (196.55 ha)	*Qualifying features:* – S1308 Barbastella barbastellus: Barbastelle bat *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: – 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.	**Feature location/ extent/ condition unknown** Barbastelle bats use a number of sites for roosts throughout the breeding season. The last full survey which involved radio-tracking to identify the distribution of bats around the site was carried out in 2002. The current annual Bat Conservation Trust survey contract provides basic presence information on an annual basis in two thirds (4 of 6 compartments) of the designated site through bat detector surveys. Detailed, annual knowledge of the presence and distribution of the bats over the remaining one third of the site is needed. **Forestry and woodland management** There are existing felling licences and England Woodland Grant Scheme agreements which do not take account of the designation and are not managing the habitat with the Barbastelle bat population in the woodland in mind. **Offsite habitat availability/ management** Offsite areas of habitat may be important for the SAC bat population but insufficient information is available to guide management of these.	Natural England's Conservation Objectives: Supplementary Advice for this site[40] identify the following dependencies: The evidence suggests that trees in the woodlands are used as a summer maternity roost, with the barbastelles showing a preference toward roosting in deciduous, hardwood trees, particularly Oak, Beech and Sweet Chestnut. The bats also use the site as a foraging area and have known navigation routes through the woodland to (predominantly) riverine areas and subsequent feeding areas in the surrounding landscape. The species forages in mixed habitats, including over water. Barbastelles appear to select cracks and crevices in wood for breeding, mostly in old or damaged trees, but cracks and crevices in the timbers of old buildings may also be used. Maternity colonies may move between suitable crevices within a small area, such as a piece of woodland or a complex of buildings. Caves and underground structures may be used for hibernation. The species is very sensitive to disturbance, together with the loss of roost-sites and food resources. The following are important wet features in the landscape around Mottisfont Bats: the channels of the River Test and River Dun, along with the fens, marshy areas, wet grassland and flowing ditches found in the surrounding valley floors. There are also a number of ponds and spring-fed channels running through the woodlands.

[40] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Mottisfont Bats: http://publications.naturalengland.org.uk/publication/4606237169680384

Table A.7: Attributes of New Forest SAC/SPA/Ramsar

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
New Forest SAC/ SPA/ Ramsar - The New Forest is a large and complex ecosystem and one of the largest remaining relatively wild areas in the South of England attracting enormous numbers of visitors each year. The New Forest SAC supports an extensive and complex mosaic of habitats including wet and dry heaths and associated bogs and mires, wet and dry grasslands, ancient pasture woodlands, frequent permanent and temporary ponds and a network of streams and rivers. These habitats support an exceptional variety of flora and fauna including internationally important populations of breeding and over-wintering birds and other notable species such as southern damselfly, stag beetle and great crested newt.			
New Forest SAC (29,213.57 ha)	*Qualifying features:* – H7140 Transition mires and quaking bogs – H7150 Depressions on peat substrates of the *Rhynchosporion* – H3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) – H3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* – H4010 Northern Atlantic wet heaths with *Erica tetralix* – H4030 European dry heaths – H6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) – H7230 Alkaline fens – H9120 Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrub layer (*Quercion roboripetraeae* or *Ilici-Fagenion*)	**Drainage** A legacy of 150 years of drainage of mires, wet heathlands, wet grasslands and streams to improve grazing has led to a loss of peat, reduction of habitat condition, bracken and scrub encroachment. A programme of restoration has been going on for the past 10 years and around 3500ha of mire and streams has been identified as still requiring restoration. **Inappropriate Scrub Control** Lack of management and grazing, and inappropriate drainage has led to the loss of open habitats through encroachment of scrub and secondary woodland. **Fish Stocking** Hatchet Pond, whilst not actively stocked, is managed as a coarse fishery including carp and bream. The common practice of ground baiting, which is popular with carp fisherman, can introduce nutrients and there may also be deliberate extra feeding to encourage growth of specimen sized fish. In addition, benthivorous fish contribute nutrient through their feeding habits. This has contributed to high turbidity and algal biomass putting the submerged flora at risk. Public disturbance and invasive species have also contributed to the declining condition of Hatchet Pond. **Deer** High levels of browsing prevent regeneration and cause a decline in the shrub and field layer of woodlands. The Forestry Commission and other landowners are actively managing the deer population and	Natural England's Conservation Objectives: Supplementary Advice for this site[41] identify the following dependencies: The New Forest sits in the centre of a dip in the surrounding chalk known as the Hampshire Basin and comprises a series of eroded terraces of soft sedimentary clays and sands capped with flint gravel, brickearth and other superficial deposits. The Soils are mainly acid, poor in nutrients, susceptible to leaching and only slowly permeable with locally enriched areas. This great variation in its soils is reflected in the New Forest's distinctive vegetation. The habitats include lowland heath, valley and seepage step mire, or fen, and ancient pasture woodland, including riparian and bog woodland and a range of acid to neutral grasslands. These habitats support an exceptionally rich diversity of fauna and flora which for much of the site are dependent on traditional management practices of grazing through Rights of Common complemented by annual heathland burning and cutting programmes. These provide structural diversity and a range of niches for plants and animals to utilise. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of qualifying features and its component species. – For H3110 - The passage of common eels upstream into Hatchet Pond are being restricted by a sluice – For H3130 - Ponds are at risk from inputs and runoff from land adjacent to the SAC Stream and river catchments extend beyond the boundary of the site and water quality and availability can be impacted by changes anywhere within the catchment. Changes outside of the site can affect

[41] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features the New Forest (SAC): http://publications.naturalengland.org.uk/publication/5727577884852224

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	– H9130 *Asperulo-Fagetum* beech forests H9190 Old acidophilous oak woods with *Quercus robur* on sandy plains *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: – 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.	cooperating with existing strategies but levels are still perceived to be high. **Air Pollution: impact of atmospheric nitrogen deposition** Air pollution impacts on vegetation diversity. Aerial deposits of nitrogen may exceed the threshold limits above which the quality and character of vegetation begins to be altered and adversely impacted. This could potentially lead to a loss or change of habitat type which in turn will impact on species reliant on that habitat. **Public Access/Disturbance** The New Forest attracts high numbers of visitors annually and there is an assumption that disturbance affects SAC habitats through erosion, compaction and damage to vegetation and water bodies. Investigation into understanding the impact of recreation is required and recreation should be managed to minimise the impact and protect the European features. Hatchet pond attracts high numbers of visitors, walkers along the shoreline have eroded the banks and introduced sediment into the water, this together with feeding of birds and fishing activities has polluted the water and put the habitat at risk. Many of the10 designated campsites within the New Forest are located in sensitive areas and have impoverished vegetation due to trampling and infrastructure. Sites in or adjacent to pasture woodland in particular are likely to progressively decline due to the impact on tree regeneration, levels of dead wood, lichens and ground flora. **Change in land management** Restoration of conifer plantation to heathland and grassland habitats is taking place throughout the New Forest on private land, on the adjacent commons and on the Crown Lands where the Verderers Enclosures are being returned to open forest. Following initial felling there is often extensive regeneration of conifer which requires management. Lack of funds for follow-up management could lead to a failure of the restoration. **Water Pollution** Many villages have properties that are not on mains sewerage and have domestic treatment units which discharge into ditches and streams that are either within or flow into the SAC. The ditches and	the hydrological regime within the site and have significant implications for the assemblage of characteristic plants and animals present. Off-site land use change driven by the planning process or caused by other activities such as agriculture, recreational demands, or infrastructure provision need to take account of this connectivity and not be to the detriment of the ongoing structure and function of the habitats on-site. Consideration needs to be given to both direct and in-direct impacts on the SAC features

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		streams have seasonal flow and this in combination with a number of properties all discharging into the same channel could lead to an increase in nutrient levels impacting on the habitats they flow through, reducing species richness and diversity. **Forestry and woodland management** Lack of management of woodlands in private ownership has led to loss of characteristic ground flora and shrubs and threat from non-natives such as scots pine, turkey oak and rhododendron. Artificial drainage can impact on wetter habitats leading to loss of sphagnum and bryophytes. **Inappropriate ditch management** Ditches alongside tracks, roads, private property and for forestry practices can impact on wet habitats which causes a loss or conversion of habitat. Drainage into streams and bogs can carry silt adding nutrients and negatively impacting on species relying on the low nutrient status of the habitats. **Invasive species** A wide range of non-native invasive species such as *Crassula helmslii*, parrots feather, pitcher plant, rhododendron, turkey oak and Himalayan balsam can be found within the SAC habitats of the New Forest. Many non-native species invade and out compete native species. **Parking** Much of the SAC is unfenced with open access and numerous roads crisscrossing the site. Although the area is well served by car parks, parking on the verges is common, this is a particular problem in villages with parking on verges outside properties, village greens and Manorial wastes. This leads to a loss of vegetation, compaction of the soil and pollution. There are a variety of solutions available but funding will be required. **Inappropriate cutting/ mowing/ grazing** Loss of traditional hay cutting, grazing and scrub management in privately owned meadows and heathlands leading to a loss or	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		conversion of habitat. In addition, there has been a significant long-term reduction in grazing pressure through loss of communing, which could lead to scrub encroachment and loss of habitat diversity. **Direct impact from 3rd party** Private property owners modify verges which are SAC habitats outside of their ownership. Issues include: creating new drives; re-turfing; planting hedges; encroachment by moving boundaries, and storage of material and equipment.	
New Forest SPA (27,968.96 ha)	*Qualifying features:* – A072(B) *Pernis apivorus*: European honey-buzzard – A082(NB) *Circus cyaneus*: Hen harrier – A099(B) *Falco subbuteo*: Eurasian hobby – A224(B) *Caprimulgus europaeus*: European nightjar – A246(B) *Lullula arborea*: Woodlark – A302(B) *Sylvia undata*: Dartford warbler – A314(B) *Phylloscopus sibilatrix*: Wood warbler *Conservation objectives:* 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: – the extent and distribution of the	**Public Access/Disturbance** The New Forest attracts high numbers of visitors annually and there is an assumption that disturbance affects the breeding success of SPA birds. The pressures are not fully understood but a recent study concluded that nightjar, woodlark and Dartford warbler densities are notably low compared with other large heathland areas such as the Dorset Heaths and Thames Basin Heaths. Investigation into understanding the impact of recreation is required and recreation should be managed to minimise the impact and protect the European designated features. **Inappropriate scrub control** Lack of management and grazing, and inappropriate drainage has led to the loss of open habitats through encroachment of scrub and secondary woodland with potential knock-on effects on the SPA bird species using these habitats. **Air Pollution: impact of atmospheric nitrogen deposition** Air pollution impacts on vegetation diversity. Aerial deposits of nitrogen may exceed the threshold limits above which the quality and character of vegetation begins to be altered and adversely impacted. This could potentially lead to a loss or change of habitat type which in turn will impact on species reliant on that habitat.	Natural England's Conservation Objectives: Supplementary Advice for this site[42] identify the following dependencies: The qualifying bird species of the SPA are dependent on the range of habitats at the site (as designated by the SAC). Within this SPA the principal habitats supporting these qualifying species are as follows: – Dartford warbler: mature lowland heathland, generally with abundant stands of mature gorse, clear-felled coniferous plantation woodland being restored to heathland – Honey buzzard: woodland – Hobby: lowland heathland / woodland – Hen harrier: lowland heathland – Woodlark: lowland heathland, clear-felled coniferous plantation woodland being restored to heathland, grassland and lichen heath – Wood warbler: broad-leaved woodland – Nightjar: lowland heathland, woodland edge, coppiced woodland and clear-felled coniferous plantation woodland being restored to heathland The ability of many bird species to safely and successfully move to and

[42] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features the New Forest (SPA): http://publications.naturalengland.org.uk/publication/5816333400801280

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	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.	**Change in land management** Restoration of conifer plantation to heathland and grassland habitats is taking place throughout the New Forest on private land, on the adjacent commons and on the Crown Lands where the Verderers Inclosures are being returned to open forest. Following initial felling there is often extensive regeneration of conifer which requires management. Lack of funds for follow-up management could lead to a failure of the restoration with potential knock-on effects on the SPA birds that rely on open habitats. **Inappropriate cutting/ mowing/ grazing** Loss of traditional hay cutting, grazing and scrub management in privately owned meadows and heathlands leading to a loss or conversion of habitat with potential knock-on effects on the SPA birds that rely on open habitats.	from nesting, feeding and roosting areas is critical to their breeding success and to the adult fitness and survival. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat. Honey buzzard, hobby, woodlark and nightjar are known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour. The home range of breeding Honey buzzards can extend to several kilometres from its nesting area. The nightjar is insectivorous, feeding primarily on moths and beetles during the summer. The location of feeding areas which support the SPA's nightjar population is often not well understood and may require further studies or research. More generally, nightjars are known to forage in such habitats as open forest and heathland This target will apply within the site boundary and where birds regularly move to and from off-site habitat where this is relevant. The foraging range of nightjar is known to extend up to several kilometres from their nest sites. Local populations of Dartford Warbler are subject to large variation in numbers in response to changing weather patterns and habitat structure. It is important that birds are able to move across the landscape and between patches of suitable habitat so they can re-colonise readily from strongholds. Habitat connectivity is particularly important for this species.
New Forest Ramsar (28,002.81 ha)	*Qualifying features:* **Ramsar Criterion 1** Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their	**Commercial-scale forest exploitation** No information available. **Drainage/land-claim (unspecified)** No information available. **Introduction/invasion of non-native plant species** No information available.	See SAC and SPA, above

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	type in Britain. **Ramsar Criterion 2** The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate. **Ramsar Criterion 3** The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scare wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.	**Recreational/tourism disturbance (unspecified)** No information available.	

Table A.8: Attributes of Porton Down SPA

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Salisbury Plain SAC, which includes Porton Down, represents the largest surviving semi-natural dry grassland area within north–west Europe. It hosts the priority habitat type 'orchid-rich sites' and supports extensive areas of *Bromus erectus* grassland, which is the most widespread and abundant calcareous grassland found in the UK.			
Porton Down SPA (1,562.32 ha)	*Qualifying features:* – A133 *Burhinus oedicnemus*; Stone-curlew (Breeding) *Conservation objectives:* 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; – 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.	Porton Down SPA is included in the Site Improvement Plan for Salisbury Plain SAC. No threats or pressures are identified for Porton Down SPA specifically, although the qualifying features of the SPA will be reliant on the site's habitats (designated as part of the SAC).	Natural England's Conservation Objectives: Supplementary Advice for this site[43] identify the following dependencies: The designated site is important for chalk grassland and heath, with scrub, ancient and plantation woodland, a large juniper population, lichens, rare flowering plants, butterflies and other invertebrates, and breeding birds, including stone-curlew. Stone-curlews nest on open, bare ground or areas with short or sparse vegetation height below 2 cm. The stone-curlew's preferred feeding habitats are short grassland, both semi-natural and improved, spring tillage, pig fields and manure heaps. Past research has demonstrated the importance of vegetation structure for foraging. On Porton Down SPA and surrounds, all these habitats are available. This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat.

[43] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Porton Down: http://publications.naturalengland.org.uk/publication/4590526095425536

Table A.9: Attributes of Portsmouth Harbour SPA/Ramsar

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Portsmouth Harbour SPA/ Ramsar - Portsmouth Harbour is a large, industrialised estuary, with internationally and nationally important numbers of birds. Together with the adjacent Chichester and Langstone Harbours, it forms one of the most important sheltered intertidal areas on the south coast of England. Portsmouth Harbour SPA is composed of extensive intertidal mudflats and sandflats with seagrass beds, areas of saltmarsh, shallow coastal waters, coastal lagoons and coastal grazing marsh. At low tide the extensive mudflats are exposed, the water drained by channels and creeks uniting to form a narrow exit into the Solent. There is comparatively little freshwater input to Portsmouth Harbour. The largest input is the River Wallington, which flows into Fareham Creek in the north-west of Portsmouth Harbour. The estuarine sediments support rich populations of intertidal invertebrates, which provide an important food source for overwintering birds. There are approximately 77 ha of seagrass beds in Portsmouth Harbour, which are found mainly in the north-west of the harbour. These beds include both *Zostera marina* (found on the low shore) and *Zostera noltii* (on the upper to mid shore). The seagrass beds are amongst the most extensive in Britain and are an important food source for dark-bellied Brent goose. The saltmarsh areas are mainly comprised of cordgrass (*Spartina*) swards and provide feeding and roosting areas for overwintering birds.			
Portsmouth Harbour SPA (1,249.6 ha)	*Qualifying features:* – A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding) – A069 *Mergus serrator*; Red-breasted merganser (Non-breeding) – A149 *Calidris alpina alpina*; Dunlin (Non-breeding) – A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding) *Conservation objectives:* 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: – 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	**Public Access/Disturbance** Recreational activities can affect annual vegetation of drift lines (H1210) and the vegetation of stony banks (H1220). **Coastal squeeze** Habitats are being lost as they are squeezed between rising sea levels and hard coastal defences that are maintained. There is a direct impact due to loss of the SAC habitats such as saltmarsh. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands. The habitats that are lost could be created elsewhere, but there is difficulty in finding suitable areas. The neutral grassland habitats will take a long time to create as mitigation, but intertidal habitat can be created relatively quickly. Current compensation provides required habitat for Epoch 1 of the Shoreline Management Plan 2, further investigation is required for Epoch 2 and 3. This project will utilise outputs from Shoreline Management Plans, the Environment Agency's Regional Habitat Creation Project and the New Forest District Council/Channel Coastal Observatory's Solent Dynamic Coast Project. **Fisheries: Commercial marine and estuarine** Towed gear, hand gathering of shellfish, bait digging and aquaculture are the main fishery activities in this site. **Water pollution** Water pollution affects a range of habitats at the site through eutrophication and toxicity. Sources include both point source discharges (including flood alleviation / storm discharges) and diffuse	In general, the qualifying bird species of the SPA rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. There are no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	features, and, – The distribution of the qualifying features within the site.	water pollution from agriculture / road runoff, as well as historic contamination of marine sediments, primarily from copper and Tributyltin (TBT). A position statement from the Environment Agency and Natural England on water quality in the Solent and housing growth confirms the need to control nitrogen inputs to the Solent from development growth. Environment Agency flood event discharge consents allow untreated waters to be discharged which end up in the SAC and are likely to have a negative impact. There is a threat of spillage from oil transportation and transfer and by the usage by ships and pilotage. **Changes in species distributions** Areas of saltmarsh are eroding and decreasing. **Change to site conditions** There is an increasing loss of saltmarsh in much of the Solent for reasons unknown, and this needs to be investigated. **Biological Resource Use** Gull egg collecting occurs in some places, and wildfowling occurs in several places. These activities are likely to be disturbing to breeding and wintering birds even though they are licenced/consented at the moment. **Air Pollution: Impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. Locally observed effects are unknown. **Direct impact from 3rd party** Off-roading is causing damage to some areas of grassland. Private sea defences are causing disruption to the natural movement processes of natural materials along the coast. House boats are unlicensed and have the potential to cause damage to intertidal habitats. Fly grazing is causing issues affecting large areas of Chichester Harbour. **Other** SAC boundary may not cover the extent of all Annex 1 and Annex 2	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		features and/or supporting habitats.	
Portsmouth Harbour Ramsar (1,248.77 ha)	*Qualifying features:* **Ramsar Criterion 3** The intertidal mudflat areas possess extensive beds of eelgrass *Zostera angustifolia* and *Zostera noltei* which support the grazing dark-bellied brent geese populations. The mud-snail *Hydrobia ulvae* is found at extremely high densities, which helps to support the wading bird interest of the site. Common cord-grass *Spartina anglica* dominates large areas of the saltmarsh and there are also extensive areas of green algae *Enteromorpha* spp. and sea lettuce *Ulva lactuca.* More locally the saltmarsh is dominated by sea purslane *Halimione portulacoides* which gradates to more varied communities at the higher shore levels. The site also includes a number of saline lagoons hosting nationally important species. **Ramsar criterion 6** Species/populations occurring at levels of international importance. Qualifying Species/ populations (as identified at designation): Species with peak counts in winter: Dark-bellied brent goose, *Branta bernicla bernicla*	**Eutrophication** No information available. **Unspecified development: urban use** Disturbance and land-take pressures (on and off-site) from urban and industrial development. **Coastal engineering, e.g. construction of sea defences for coastal protection** Coastal squeeze arising from coastal defences.	In general, the qualifying bird species of the SPA rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat.

Table A.10: Attributes of River Itchen SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
River Itchen SAC - The River Itchen is one of the `classic` chalk rivers of southern England, drawing most of its character from this geological stratum. The Itchen supports an abundant and exceptionally species rich aquatic flora. It has a primary notification for its river habitat, at SSSI level (chalk river type) and also under Habitats Directive Annex I (Code H3260, watercourses with *Ranunculion* and *Batrachion* vegetation). This habitat notification comprises the river channel, its banks and parts of its riparian zone. In addition, parts of the floodplain are notified for their wetland habitat, and the river discharges via Southampton Water into the Solent which has a range of habitat designations.			
River Itchen SAC (303.98 ha)	*Qualifying features:* – H3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation – S1044 Southern damselfly *Coenagrion mercuriale* – S1163 Bullhead *Cottus gobio* – S1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes* – S1096 Brook lamprey *Lampetra planeri* – S1106 Atlantic salmon *Salmo salar* – S1355 Otter *Lutra lutra* *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: – The extent and distribution of qualifying natural habitats and habitats of qualifying species;	**<u>Water Pollution</u>** The Diffuse Water Pollution Plan identifies numerous issues with water quality, in addition to point sources from Waste Water Treatment Works. The Plan is a critical document to achieve favourable condition, and action-owners were consulted as part of the process of revising the plan. Pollution causes excessive algal growth, smothering macrophytes, and increased BOD, decreasing oxygen availability for spawning gravels used by salmon and trout. Reducing road run off can build on the existing Environment Agency and Highways Agency project assessing priority outfalls and use existing Memorandum of Understanding to highlight any known issues with trunk roads for potential remedial funding. Work is needed with the Environment Agency to quantify any impacts. Possible role for Test and Itchen Catchment Partnership (TICP) through the Catchment Action Plan, to focus on non-trunk roads with Hampshire County Council. Environment Agency (EA) Review of Consents (RoC) process has been completed, but phosphate standards used conform to previous Common Standards Monitoring (CSM) guidance (used for setting SSSI and SAC targets). There is a risk of permitting several years of non-compliance from affected discharges. Revised CSM targets may impact on all discharges. **<u>Physical modification</u>** A range of physical modifications affect the Annex I river habitat, which have adverse consequences for characteristic biological communities of the habitat including specifically notified species. Modifications include weirs and other in-channel structures causing impoundment,	Natural England's Conservation Objectives: Supplementary Advice for this site[44] identify the following dependencies: The Itchen is mainly spring-fed and has only a narrow range of seasonal variation in physical and chemical characteristics. The water is of high quality, being naturally base-rich and of great clarity; and its temperature is relatively constant, with dissolved oxygen levels at or near saturation. The majority of species are present throughout the system and downstream changes are less than in most other rivers. The river provides good water quality, extensive beds of submerged plants that act as a refuge for fish species, and coarse sediments that are vital for spawning and juvenile development. The Itchen valley contains areas of fen, swamp and meadow supporting vegetation with diverse plant communities, some typically species-rich. Water courses, including meadow ditches, base-rich runnels and flushes in open areas, and small side- channels. The diverse and stable habitat conditions support the qualifying species. The characteristic biological communities of the site (including its qualifying species) are dependent on the integrity of sections of river channel, riparian areas, and transitional and marine waters that lie outside of the site boundary. Headwater areas and tributaries may not fall within the site boundary, yet a range of species characteristic of the site may use these areas for spawning and juvenile development and be critical for sustaining populations within the site. Fully developed riparian zones are essential to site integrity, yet part of this zone may lie outside of the site boundary, particularly if the river channel is operating under natural processes and moves laterally over time within the floodplain. The conditions experienced by long-distance migratory species (such as salmon, sea and river lampreys, allis and twaite

[44] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features River Itchen: http://publications.naturalengland.org.uk/publication/5130124110331904

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	– 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.	siltation and interruptions to biological movements, over-deepening, over-widening and straightening of channels, and bank re-sectioning and reinforcement. **Siltation** Siltation resulting from a variety of factors (direct inputs of silt into the system from land use, runoff from diffuse sources, deposition arising from impoundments and overwide channels) is a widespread problem affecting the Annex I river habitat, with consequences for macrophytes, southern damselfly habitat (where in ditches) and spawning gravels for fish. **Overgrazing** Impacts of over-grazing on river banks and wet meadow systems, removing riparian and meadow habitat and causing runoff into watercourses. **Water abstraction** Abstraction modifies the natural flow regime on which the Annex I river habitat depends for its proper functioning. Impacts may occur on habitat character and habitat extent, within the channel or in riparian wetland areas. All parts of the flow regime may be affected but low-to-intermediate flows are most likely to be significantly impacted. Abstraction should not impact on floodplain SAC features such as southern damselfly, as well as riverine features such as salmon. Effects on the habitat can have various effects on individual notified species. Activities outside of the SAC may also have detrimental impacts on site features and habitats. Natural England does not endorse any particular solution at this time. **Inappropriate weed control** Management of aquatic weed for fishery activities affects protected habitats e.g. *Ranunculus*. This is activity is currently exempted under the OLDs list (Operations Likely to Damage), and the extent and level of impacts on the watercourse is not conclusively known. **Hydrological changes**	shads and eels) outwith the site (through the saline transition zone, estuary, coastal waters and into the high seas) are critical to the well-being of populations within the site. Off-site influences that may impact on the well-being of the population within the site may include, but not limited to, entrainment, temperature, water quality, mortality from exploitation. The adjacent habitat is in hydrological continuity with the river. The river floodplain comprises characteristic vegetation types that reflect the natural variation in topographical and hydrological conditions. The fen habitats show characteristic zonations of vegetation types arising from hydrological factors and the zonation is not truncated or fragmented by land use or management factors.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		Some locations on the floodplains are too dry, with reasons not clear - impacts on ditches (decreased flowing water) for southern damselfly and meadow flora. **Inappropriate water levels** Water levels are not appropriate. The Water Level Management Plan (Natural England with Environment Agency) agreed options to re-wet the floodplain, benefitting flora and connecting habitat for southern damselfly. These need re-appraisal and implementation where possible. **Change in land management** Risk of non-compliance with HLS agreements may be affecting water quality of the river and floodplain carriers. **Inappropriate cutting/mowing** There are some instances of inappropriate management of riverbanks, which impacts on marginal habitat, with consequences for riparian and in-channel biota. These affect the biota using the riparian zone directly, and the biota of the river channel in terms of reducing bankside cover and enhancing silt inputs. Better bankside management can help prevent runoff from adjacent fields into the river, protecting water quality. **Invasive species** The presence of signal crayfish in parts of the catchment is suspected posing a significant risk to the white-clawed crayfish population through crayfish plague. However, white-clawed crayfish populations are fragmented, and therefore direct impacts from signals are suspected not to be significant. Also, there are widespread issues with Himalayan and orange balsam along the riparian corridor but the extent of the problem is unknown. **Undergrazing** Undergrazing impacts on wet meadow systems, causing degradation of southern damselfly habitat in particular. Bridges are required to access and manage sites and prevent SAC condition to deteriorate. This requires special project funding, which is currently prohibited in	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		HLS agreements. **Inappropriate ditch management** Some ditches are not managed, leading to reed encroachment, reducing flow and therefore prohibiting southern damselfly breeding habitat. **Inappropriate scrub control** Inappropriate scrub control impacts particularly around ditches for southern damselfly, where scrub shades some ditches, preventing growth of marginal plants for egg-laying, and reduce flow in ditches. **Forestry and woodland management** Some parts of channel are excessively shaded by wet woodland, impacting on the macrophyte community. The River Restoration Strategy identifies some stretches where excessive shading is causing a problem, but it is important to look at whole catchment, and assess against all SAC features when reviewing locations/actions. Some stretches may benefit from tree planting to reduce water temperatures, particularly in light of climate change, but must again be carefully assessed.	

Table A.11: Attributes of Rook Clift SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Rook Clift SAC is a forest of slopes, screes and ravines, associated with rocky slopes on the base rich soils of the South Downs. This ancient woodland is dominated by large coppice stools of Large-leaved lime, together with Ash and some Beech. The presence of Large-leaved lime as a canopy dominant makes this woodland virtually unique. The site also supports a number of mollusc species, notably the Cheese snail and a rich bryophyte flora.			
Rook Clift SAC (10.82 ha)	*Qualifying features:* – H9180. *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes* *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; – 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	**Deer** Deer are currently present in numbers that threaten potential regeneration of the woodland shrub and canopy species. **Forestry and woodland management** The woodland as a whole requires management, however, there is currently no agreed management plan in place stating management priorities or timescales. Previous recommendations to coppice the Large-leaved lime have been followed. Further work is required for sustainable management into the future. **Feature location / extent / condition unknown** The distribution and abundance of Large-leaved lime trees within the woodland is not recorded. It is therefore not possible to monitor change or identify management requirements.	Natural England's Conservation Objectives: Supplementary Advice for this site[45] identify the following dependencies: This site is an ancient woodland which remains in a semi-natural condition. Large-leaved lime *Tilia platyphyllos* dominates the canopy, together with some ash *Fraxinus excelsior* and beech *Fagus sylvatica*. It lies on the deeper soils towards the base of the slope and valley bottom of the small wooded combe, which gives the site its humid microclimate. The soils are rather deeper and there is less exposed rock at this site because the chalk is more readily weathered than the limestones on which many of the other sites lie. This 10 ha woodland is small and for a healthy woodland ecosystem, the management of the wider landscape is key. The unique feature of Rook Clift is the occurrence of so many large leaved limes which should be conserved.

[45] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Rook Cliff: http://publications.naturalengland.org.uk/publication/6335772969926656

Table A.12: Attributes of Salisbury Plain SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Salisbury Plain SAC (which includes Porton Down SPA) represents the largest surviving semi-natural dry grassland area within north–west Europe. It hosts the priority habitat type 'orchid-rich sites' and supports extensive areas of *Bromus erectus* grassland, which is the most widespread and abundant calcareous grassland found in the UK.			
Salisbury Plan SAC (21,438.10 ha)	*Qualifying features:* – H5130. *Juniperus communis* formations on heaths or calcareous grasslands; – H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*FestucoBrometalia*) (important orchid sites); – S1065. *Euphydryas* (*Eurodryas, Hypodryas) aurinia*; Marsh fritillary butterfly *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; – 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	**Changes in species distribution** On Porton Down, the juniper population is judged to be in Unfavourable Condition due to a decline in the population level. A recent Wiltshire Botanical Society survey counted bushes according to age, health and sex. A new cohort of seedlings is developing at various locations across the site, some of which will be protected by rabbit exclosure. Success with bringing on cuttings means that this technique could potentially be extended to provide enough tall/rabbit-proof plants for planting out and restoring the population. *Phytophthora austrocedri* has caused dieback and mortality of juniper at a National Nature Reserve in the north Pennines; therefore, any plan to import juniper plant material onto the SAC, should consider the bio-security risk. **Air pollution** On Salisbury Plain SAC, nitrogen deposition exceeds the critical load for juniper *Juniperus communis* subsp. communis. There is a risk that this could contribute towards coarse grass dominance, decline in lichens, changes in plant biochemistry and an increased sensitivity to abiotic stress. Nitrogen deposition also exceeds the critical load for the Marsh fritillary population.	Natural England's Conservation Objectives: Supplementary Advice for this site[46] identify the following dependencies: Salisbury Plain is an extensive and open rolling chalk plateau, with Parsonage Down on the southern edge of this and Porton Down to the south-west. The three constituent sites are located on chalk geology, cut by the tributaries of the Hampshire Avon. The soils are generally alkaline and free-draining, apart from places with overlying clay-with flints and long-term rainwater leaching and lessivage, which are more acidic. The defining habitat type is chalk grassland, also some secondary and ancient woodland is present. Juniper scrub is significant on parts of Salisbury Plain and much of Porton Down. Marsh fritillaries survive in 'meta-populations' formed by a number of subpopulations (linked by occasional migration) which may frequently die out and re-establish. Marsh fritillary colonies will move between sites or to different habitat patches within sites in response to changing ecological conditions. These meta-populations are reliant on the conservation of a cluster of suitable sites in close proximity to enable this (re)colonisation. Adult butterflies tend to be sedentary but some individuals will disperse and have been known to move up to 15-20km away; and remain in a series of linked metapopulations, forming numerous temporary sub-populations, which frequently die out and re-colonise. Where unable to do this, populations do not seem to be able to persist in habitat fragments. It is therefore essential to conserve a cluster of sites in close proximity. The connectivity of the wider local landscape to the SAC may therefore be important as this may help to ensure the survival of the overall population even if sub-populations are temporarily affected. Salisbury Plain East is currently disconnected from the Centre and West, for average butterfly dispersals; similarly, Parsonage Down SSSI/NNR and the SSSIs on the northern perimeter of the military

[46] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Salisbury Plain: http://publications.naturalengland.org.uk/publication/4786217489006592

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	qualifying natural habitats and the habitats of qualifying species rely – The populations of qualifying species, and, – The distribution of qualifying species within the site.		training area are disconnected from Salisbury Plain SSSI, for average butterfly dispersals. The land between these sites may provide critical functional connection for marsh fritillary butterfly and should be restored. Similarly, the northern edge of Porton Down has scope for connecting to the nearby RSPB reserve, Winterbourne Downs, where extensive chalk grassland creation is already underway.

Table A.13: Attributes of Shortheath Common SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Shortheath Common SAC is common land situated in East Hampshire and consists of a wide range of wet and dry heathland habitats and bog woodland. The focal point of the site is a substantial valley mire with a rich ground flora of species such as sedges, sundew, cotton grass, and marsh cinquefoil. Bog mosses form a floating raft over much of the mire. The mire is notable for its high cover of cranberry. The site has a diverse dragonfly assemblage.			
Shortheath Common SAC (58.94 ha)	*Qualifying features:* – H4030. European dry heaths – H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface – H91D0. Bog woodland *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; – The extent and distribution of the qualifying natural habitats – The structure and function (including typical species) of the qualifying natural habitats, and, – The supporting processes on which the qualifying natural habitats rely	**Inappropriate scrub control** There is a build up of scrub and leaf litter, alongside areas where grasses are dominant or too tall. Active management is required to reduce this and there are several options available. Approval from Planning Inspectorate (PINS) is being sought to allow installation of fencing and other infrastructure, to enable grazing on the common. **Public access / disturbance** This site is common land and open access, and is regularly used for recreation. Shortheath Common is dissected by a road and there are parking facilities that enable visitors to access the common. Integrated Site Assessment carried out in 2013 identified areas of acid grassland and dry heath where vegetation was being lost due to recreational disturbance. **Direct impact from 3rd party** Encroachment by householders onto the SAC dry heath mosaic is frequent on this site. Whilst each encroachment is relatively small, cumulatively the area is significant. Attempts by the landowners or Natural England to tackle these have not worked. **Air pollution** Nitrogen deposition exceeds site relevant critical loads. It is unknown if air quality is affecting the SAC habitats. There is a need to determine the level of Nitrogen emissions (if any) from suspected local sources as this could be adding to the critical load.	Natural England's Conservation Objectives: Supplementary Advice for this site[47] identify the following dependencies: European dry heaths typically occur on freely-draining, acidic to circumneutral soils with generally low nutrient content. The term 'transition mire' relates to vegetation that in floristic composition and general ecological characteristics is transitional between acid bog and alkaline fens, in which the surface conditions range from markedly acidic to slightly base-rich. A birch *Betula* spp.-dominated variant of Bog woodland occurs where birch *Betula* spp. or willow *Salix* spp. occur in long-term stable combinations with bog vegetation. The habitat type has not previously been well described in the UK, and consequently knowledge of its ecological characteristics is limited. Shortheath Common is part of a chain of important lowland heathland sites around Bordon, some of which are components of the Wealden Heaths II Special Protection Area (SPA).

[47] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Shortheath Common: http://publications.naturalengland.org.uk/publication/4851353352404992

Table A.14: Attributes of Solent and Dorset SPA

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Solent and Dorset Coast SPA - The site is located on the south coast within the English Channel and extends from the Isle of Purbeck in the West to Bognor Regis in the East, following the coastline on either side to the Isle of Wight and into Southampton Water. The Solent and Dorset Coast Special Protection Area (SPA) was classified on 16 January 2020. It was classified as described in the departmental brief with boundary amendments, as described in appendix 4 of the consultation report. There are already four Special Protection Areas (SPAs) within the Greater Solent that are designated for breeding terns (the qualifying features of this SPA). These are Chichester & Langstone Harbours SPA (for Sandwich and Little tern), the Solent and Southampton Water SPA (for Common, Sandwich and Little tern) and Pagham Harbour SPA (Little tern). The fourth associated SPA lies within Poole Harbour (Common Tern and Sandwich tern). The potential new SPA covers the principal sea area that the breeding terns use for foraging during April-September. Whilst management measures are already in place in this foraging area due to the existing SPA, the classification of this new site will provide clarity to stakeholders about the areas the terns forage within and the species that require consideration.			
Solent and Dorset Coast SPA (It is understood that the site area has been amended to 89,078, in line with Natural England's conclusions in the Consultation Report (Treby, S. 2017, Version 6))	*Qualifying features:* The site regularly supports more than 1% of the Great Britain breeding populations of the following three species listed in Annex I of the Birds Directive: – A193(B) Sterna *Hirundo*, Common tern – A191(B) Sterna *sandvicensis*, Sandwich tern – A195(B) Sterna *albifrons*, Little tern *Conservation objectives:* Not yet identified for this SPA.	Not yet identified for this SPA, however these are likely to be similar to those listed for Solent and Southampton Water SPA, where these relate to the qualifying features of this SPA.	In general, the qualifying bird species of the SPA rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. – Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. There are no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA, where information is available.

Table A.15: Attributes of Solent and Isle of Wight Lagoons SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Solent and Isle of Wight Lagoons SAC - The Solent and Isle of Wight Lagoons SAC on the south coast of England encompasses a series of coastal lagoons, including percolation, isolated and sluiced lagoons. The site includes a number of lagoons in the marshes in the Keyhaven – Pennington area, at Farlington Marshes in Langstone Harbour, behind the sea-wall at Bembridge Harbour and at Gilkicker, near Gosport. The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna.			
Solent and Isle of Wight Lagoons SAC (37.93 ha)	*Qualifying features:* – H1150 Coastal lagoons *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; – 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	**Hydrological changes** Sluices around the lagoons, particularly in East Hampshire and the Isle of Wight are in poor condition/potentially not functioning fully. This causes water quality issues and changes in the hydrology of the lagoons. Freshwater streams and land and golf course drainage also threaten the salinity and water quality of the lagoons. Lagoon habitat is being created where tidal sluices are not functioning as originally designed and are letting in sea water resulting in good quality lagoon habitat in new areas. Inclusion of the lagoons into the designation will enable effective management of this habitat and ensure the designation is scientifically robust **Inappropriate weed control** There is a history of algaecide application to the Gilkicker lagoons during the management of the golf course. The algaecide can have detrimental effects on the lagoonal vegetation and associated specialist fauna. Should this practice continue unmanaged this could impact on the SAC. **Coastal squeeze** Sea level rise and coastal defence threaten salinity and area of lagoons. Flooding, percolation and infiltration from sea level rise and extreme weather can alter the salinity balance of the lagoons. Flood defences or managed retreat may reduce the area of low-lying fringe habitats. Current compensation provides required habitat for Epoch 1 of the Shoreline Management Plan 2 (SMP2), further investigation is required for Epoch 2 and 3. This project will utilise outputs from Shoreline Management Plans, the Environment Agency's Regional Habitat Creation Project and the New Forest District Council/Channel Coastal Observatory's Solent Dynamic Coast Project. **Invasive species**	The qualifying habitats of the SAC are reliant a range of coastal factors, including salinity, sedimentation, tide, sea level, turbidity and elevation, which influence the interdependent intertidal, subtidal and terrestrial habitats. These factors influence the complex interdependent intertidal, subtidal and terrestrial habitats present along the coast. There are no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		Marine Invasive Non-Native Species (INNS) are known to be introduced and subsequently spread through commercial shipping (through the release of ballast water and biofouling on hulls); recreational boating (through biofouling on hulls); aquaculture (through contamination of imported/moved stock or escaped stock), and natural dispersal. If present, INNS pose a threat to SAC lagoon habitats by displacing or preying upon native species, by destroying habitats, or by introducing new diseases or parasites. **Air pollution** 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. This requires further investigation.	

Table A.16: Attributes of Solent Maritime SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Solent Maritime SAC - The Solent is a complex site encompassing a major estuarine system on the south coast of England. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime with double tides, as well as for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive areas of intertidal mudflats, often supporting eelgrass *Zostera* spp. and green algae, saltmarshes and natural shoreline transitions, such as drift line vegetation. The SAC forms part of the Solent & Southampton Water SPA/Ramsar. All four species of cordgrass found within the UK are present within the Solent and it is one of only two UK sites with significant amounts of the native small cordgrass *Spartina maritima.* The SAC contains rich intertidal mudflats, saltmarsh, shingle beaches and adjacent coastal habitats, including grazing marsh, reedbeds and damp woodland.			
Solent Maritime SAC (11,243.12 ha)	*Qualifying features:* – H1110 Sandbanks which are slightly covered by sea water all the time – H1320 *Spartina* swards (*Spartinion maritimae*) – H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae)* – S1016 *Vertigo moulinsiana*: Desmoulin`s whorl snail – H1130 Estuaries – H1210 Annual vegetation of drift lines – H1220 Perennial vegetation of stony banks – H1140 Mudflats and sandflats not covered by seawater at low tide – H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") – H1150 Coastal lagoons – H1310 *Salicornia* and other annuals colonising mud and sand *Conservation objectives:*	**Public Access/Disturbance** Recreational activities can affect annual vegetation of drift lines (H1210) and the vegetation of stony banks (H1220). **Coastal squeeze** Habitats are being lost as they are squeezed between rising sea levels and hard coastal defences that are maintained. There is a direct impact due to loss of the SAC habitats such as saltmarsh. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands. The habitats that are lost could be created elsewhere, but there is difficulty in finding suitable areas. The neutral grassland habitats will take a long time to create as mitigation, but intertidal habitat can be created relatively quickly. Current compensation provides required habitat for Epoch 1 of the Shoreline Management Plan 2, further investigation is required for Epoch 2 and 3. This project will utilise outputs from Shoreline Management Plans, the Environment Agency's Regional Habitat Creation Project and the New Forest District Council/Channel Coastal Observatory's Solent Dynamic Coast Project. **Water pollution** Water pollution affects a range of habitats at the site through eutrophication and toxicity. Sources include both point source discharges (including flood alleviation / storm discharges) and diffuse water pollution from agriculture / road runoff, as well as historic contamination of marine sediments, primarily from copper and Tributyltin (TBT). A position statement from the Environment Agency and Natural England on water quality in the Solent and housing growth confirms the need to control nitrogen inputs to the Solent from development growth. Environment Agency flood event discharge	The qualifying habitats of the SAC are reliant a range of coastal factors, including salinity, sedimentation, tide, sea level, turbidity and elevation, which influence the interdependent intertidal, subtidal and terrestrial habitats. These factors influence the complex interdependent intertidal, subtidal and terrestrial habitats present along the coast. There are no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	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: – 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.	consents allow untreated waters to be discharged which end up in the SAC and are likely to have a negative impact. There is a threat of spillage from oil transportation and transfer and by the usage by ships and pilotage. **Changes in species distributions** Areas of saltmarsh are eroding and decreasing. **Climate change** Climate change has resulted in rising sea level causing flooding to habitats. **Change to site conditions** There is an increasing loss of saltmarsh in much of the Solent for reasons unknown, and this needs to be investigated. **Invasive species** The highest risk pathways through which marine INNS are introduced and then spread have been identified as: commercial shipping (through release of ballast water, and biofouling on hulls); recreational boating (through biofouling on hulls); aquaculture (through contamination of imported or moved stock - or escaped stock in the case of the pacific oyster), and natural dispersal. **Direct land take from development** Private sea defences are causing disruption to the natural processes of allowing erosion to move sediments around the SAC. **Change in land management** Changes to land management are likely to occur in areas where tidal flaps/sluices are altered and this results in changes to water levels or salinity of that land. Some sluices are failing, which may also result in changes to water levels or salinity of land. Some ditches and drains are neglected and this can cause difficulties in land management, resulting in changes. **Air Pollution**	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		Impact of atmospheric nitrogen deposition Nitrogen deposition exceeds site relevant critical loads. Locally observed effects are unknown. **Hydrological changes** Titchfield Haven has a high level of water abstraction licences - if all were used then water levels would be too low in the SAC. Percolation of sea water through sea walls is causing saline intrusion into non-saline grassland habitats and changing them. **Direct impact from 3rd party** Off-roading is causing damage to some areas of grassland. Private sea defences are causing disruption to the natural movement processes of natural materials along the coast. House boats are unlicensed and have the potential to cause damage to intertidal habitats. Fly grazing is causing issues affecting large areas of Chichester Harbour. **Extraction: non-living resources** Shingle extraction for aggregates may have an adverse impact upon intertidal fauna and flora and may affect the movement of coastal sediments that would in turn have an impact upon intertidal habitats. **Other** SAC boundary may not cover the extent of all Annex 1 and Annex 2 features and/or supporting habitats.	

Table A.17: Attributes of Solent and Southampton Water SPA/Ramsar

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Solent and Southampton Water SPA/ Ramsar - The site comprises of estuaries and adjacent coastal habitats including intertidal flats, saline lagoons, shingle beaches, saltmarsh, reedbeds, damp woodland, and grazing marsh. The diversity of habitats support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.			
Solent and Southampton Water SPA (5,401.12 ha)	*Qualifying features:* – A046a(NB) *Branta bernicla bernicla*: Dark-bellied brent goose – A052(NB) *Anas crecca*: Eurasian teal – A156(NB) *Limosa limosa islandica*: Black-tailed godwit – Waterbird assemblage – A176(B) *Larus melanocephalus*: Mediterranean gull – A191(B) *Sterna sandvicensis*: Sandwich tern – A192(B) *Sterna dougallii*: Roseate tern – A193(B) *Sterna hirundo*: Common tern – A195(B) *Sterna albifrons*: Little tern – A137(NB) *Charadrius hiaticula*: Ringed plover *Conservation objectives:* 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: – the extent and distribution of the habitats of the qualifying features; – the structure and function of the habitats	**Public Access/Disturbance** Recreational activities can affect annual vegetation of drift lines (H1210) and the vegetation of stony banks (H1220). **Coastal squeeze** Habitats are being lost as they are squeezed between rising sea levels and hard coastal defences that are maintained. There is a direct impact due to loss of the SAC habitats such as saltmarsh. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands. The habitats that are lost could be created elsewhere, but there is difficulty in finding suitable areas. The neutral grassland habitats will take a long time to create as mitigation, but intertidal habitat can be created relatively quickly. Current compensation provides required habitat for Epoch 1 of the Shoreline Management Plan 2, further investigation is required for Epoch 2 and 3. This project will utilise outputs from Shoreline Management Plans, the Environment Agency's Regional Habitat Creation Project and the New Forest District Council/Channel Coastal Observatory's Solent Dynamic Coast Project. **Fisheries: Commercial marine and estuarine** Towed gear, hand gathering of shellfish, bait digging and aquaculture are the main fishery activities in this site. **Water pollution** Water pollution affects a range of habitats at the site through eutrophication and toxicity. Sources include both point source discharges (including flood alleviation / storm discharges) and diffuse water pollution from agriculture / road runoff, as well as historic contamination of marine sediments, primarily from copper and Tributyltin (TBT). A position statement from the Environment Agency and Natural England on water quality in the Solent and housing growth confirms the need to control nitrogen inputs to the Solent from	In general, the qualifying bird species of the SPA rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. – Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat. There are no Natural England Conservation Objectives: Supplementary Advice for this site. We will further consider the dependencies of the site's qualifying features in the next iteration of the HRA.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	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.	development growth. Environment Agency flood event discharge consents allow untreated waters to be discharged which end up in the SAC and are likely to have a negative impact. There is a threat of spillage from oil transportation and transfer and by the usage by ships and pilotage. **Changes in species distributions** Areas of saltmarsh are eroding and decreasing. **Climate change** Climate change has resulted in rising sea level causing flooding to habitats. **Change to site conditions** There is an increasing loss of saltmarsh in much of the Solent for reasons unknown, and this needs to be investigated. **Invasive species** The highest risk pathways through which marine INNS are introduced and then spread have been identified as: commercial shipping (through release of ballast water, and biofouling on hulls); recreational boating (through biofouling on hulls); aquaculture (through contamination of imported or moved stock - or escaped stock in the case of the pacific oyster), and natural dispersal. **Biological Resource Use** Gull egg collecting occurs in some places, and wildfowling occurs in several places. These activities are likely to be disturbing to breeding and wintering birds even though they are licenced/consented at the moment. **Change in land management** Changes to land management are likely to occur in areas where tidal flaps/sluices are altered and this results in changes to water levels or salinity of that land. Some sluices are failing, which may also result in changes to water levels or salinity of land. Some ditches and drains are neglected and this can cause difficulties in land management, resulting in changes.	

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		Inappropriate pest control Predator control is decreasing, resulting in increased predation by foxes etc. and this is the likely cause of decrease in successful breeding of gulls and terns. **Air Pollution** Impact of atmospheric nitrogen deposition Nitrogen deposition exceeds site relevant critical loads. Locally observed effects are unknown. **Direct impact from 3rd party** Off-roading is causing damage to some areas of grassland. Private sea defences are causing disruption to the natural movement processes of natural materials along the coast. House boats are unlicensed and have the potential to cause damage to intertidal habitats. Fly grazing is causing issues affecting large areas of Chichester Harbour. **Other** SAC boundary may not cover the extent of all Annex 1 and Annex 2 features and/or supporting habitats.	
Solent and Southampton Water Ramsar (5,346.44 ha)	*Qualifying features:* **Ramsar Criterion 1** The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs. **Ramsar Criterion 2**	**Erosion** Coastal Defence Strategies, regulation of private coastal defences, shoreline management plans.	In general, the qualifying bird species of the Ramsar site rely on: – The site's ecosystem and hydrology as a whole (see list of habitats below). – Maintenance of populations of species that they feed on (see list of diets below). – Off-site habitat, which provide foraging habitat for these species. – Open landscape with unobstructed line of sight within nesting, foraging or roosting habitat.

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site. **Ramsar Criterion 5** Assemblages of international importance – Species with peak counts in winter: 51343 waterfowl (5 year peak mean 1998/99-2002/2003) **Ramsar Criterion 6** Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation): – Species with peak counts in spring/autumn: Ringed plover *Charadrius hiaticula* – Species with peak counts in winter: Dark-bellied brent goose *Branta bernicla bernicla,* Eurasian teal *Anas crecca,* Black-tailed godwit *Limosa limosa islandica*		

Table A.18: Attributes of Wealden Heaths Phase 2 SPA

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
This group of heathland sites incorporates Woolmer Forest SAC (see below). The complex includes important military training land as well as popular recreational areas.			
Wealden Heaths Phase 2 (2,053.83 ha)	*Qualifying features:* – A224 *Caprimulgus europaeus*; European nightjar (Breeding) – A246 *Lullula arborea*; Woodlark (Breeding) – A302 *Sylvia undata*; Dartford warbler (Breeding) *Conservation objectives:* 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; – 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.	**Changes in land management** Parts of the complex have suffered from management neglect in the past and there are ongoing management issues. Common issues are lack of structural diversity, bracken encroachment and scrub development. Grazing is not practical in parts of the complex but viable alternative means of management to meet objectives are not yet in place. Grazing may also be constrained in parts because of resistance to fencing of common land **Feature location / extent / condition unknown** There is only partial coverage of the SPA for monitoring of Annex 1 birds and those areas are reliant on volunteer recorders; there is a need for a more strategic, long-term approach to monitoring. **Public access, disturbance** Visitor access provision is not currently coordinated between sites or managed so as to reduce impacts on ground-nesting birds. **Military** There is currently poor coordination between management for military training purposes and nature conservation management at Woolmer Forest and scope for significant gains with closer working between partners. The production of an integrated management plan is needed. **Wildfire / arson** Wildfire is a natural hazard identified in the National Risk Assessment / Register and Community Risk Registers. Wildfires in the south of England are likley to increase as identified in the Climate Change Risk Assessment (CCRA). Wildfires can be a serious risk to human life, residential and commercial property and critical national infrastructures, as well as being a high risk threat to reptile	Natural England's Conservation Objectives: Supplementary Advice for this site[48] identify the following dependencies: The underlying geology is composed of Cretaceous sandstones and ironstone, which give rise to predominantly acid soils. These are often sandy and free-draining but clay and silt layers produce poorlydrained areas where streams and wetland habitats can be found. The landscape is largely rural and is characterised by a prominent escarpment with broad, steep-sided valleys and low, rounded hills with a mixture of heaths, oak and birch woodland, mature conifer woodlands, pastures and wetlands. The component parts of the SPA have extensive areas of lowland heath which is similar in character to the nearby heathland complexes at Thursley, Hankley and Frensham Commons SPA and the Thames Basin Heaths SPA. Dartford warbler are strongly associated with lowland heaths with extensive patches of mature gorse with an abundance of favoured invertebrate prey items such as spiders. However, they will also nest in areas of mature heather, clearings in forestry plantations and patches of bracken. Nightjars are migratory, spending the winter months feeding in parts of Africa. The species is considered to be vulnerable to the effects of long-term climate change on drought-prone areas of Africa and desert expansion. Nightjar regularly utilise areas across the SPA for nesting and feeding. Favoured areas of habitat are areas of heath with high structural diversity including bare patches or short vegetation, but they will also utilise clearings in woods, broad rides in conifer plantations and sparsely vegetated areas. The woodlark has benefited from rotational management of conifer plantations where it can utilise recently felled areas and areas of young

[48] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Wealden Heaths Phase 2: http://publications.naturalengland.org.uk/publication/5729030657540096

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		populations, inverts and plant diversity resulting in significant habitat loss for Annex 1 birds. Open heath is the predominant risk (dry and wet heath, peat habitats) as well as young coniferous woodland. Impacts can last for many years for example by the wholesale removal of all gorse and heather seedbank.	regrowth for nesting. Woodlarks favour areas of short vegetation or sparsely-vegetated areas on heaths with scattered trees for use as song-posts. They feed on seeds and small invertebrates. Numbers of woodlarks tend to fluctuate over time in relation to successional development of heaths and plantations, with large numbers often present following heath fires or tree clearance. Nightjar and Woodlark favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. They seek out places where there is an unobstructed line of sight in nesting, feeding or roosting habitat so that they are able to detect approaching predators and to ensure visibility of displaying behaviour. An open landscape may also be required to facilitate movement of birds between the SPA and any off-site supporting habitat ('functionally-linked land'). Woodlark will often utilise areas adjacent to heathland for feeding, including areas of short grassland, stubble fields or weedy margins of arable fields, golf courses and bare areas in quarry sites. Such areas may be of critical importance in sustaining populations, particularly during winter months. An open landscape may also facilitate movement of birds between the SPA and any off-site supporting habitat. Although they will utilise enclosed features such as clearings in conifer plantations, Dartford warbler favour large areas of open terrain, largely free of obstructions, in and around nesting, roosting and feeding areas. They will benefit from availability of an unobstructed line of sight within nesting, feeding or roosting to enable birds to detect approaching predators, or to ensure visibility of displaying behaviour. It will also be beneficial to maintain and restore habitat links between the SPA and off-site supporting habitat, or to alternative areas of nesting habitat.

Table A.19: Attributes of Woolmer Forest SAC

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
This site is part of the Wealden Heaths Phase 2 SPA, as above.			
Woolmer Forest SAC (666.68 ha)	*Qualifying features:* – H3160. Natural dystrophic lakes and ponds; Acid peat-stained lakes and ponds – H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath – H4030. European dry heaths – H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface – H7150. Depressions on peat substrates of the *Rhynchosporion* *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; – The extent and distribution of the qualifying natural habitats – The structure and function (including typical species) of the qualifying natural habitats, and,	**Changes in land management** Parts of the complex have suffered from management neglect in the past and there are ongoing management issues. Common issues are lack of structural diversity, bracken encroachment and scrub development. Grazing is not practical in parts of the complex but viable alternative means of management to meet objectives are not yet in place. Grazing may also be constrained in parts because of resistance to fencing of common land **Invasive species** Ponds and wetlands at Woolmer Forest are dominated by *Crassula helmsii,* adversely affecting habitat quality. Control is particularly difficult because of presence of rare amphibians. It is currently unclear to what extent the presence of *Crassula* is adversely affecting the dystrophic lake interest feature and indeed whether effective control is feasible. **Hydrological changes** Parts of the wet heath and mire areas at Woolmer Forest are affected by the presence of drainage ditches. The full impact of these has not yet been assessed but it is likely that they are having adverse impacts. **Feature location/ extent / condition unknown** Work is needed by Natural England to clarify the conservation objectives for designated features at Woolmer Forest, to improve the evidence base on the interest features, to identify where these occur, and to provide greater linkage between objectives and military training use. **Military** There is currently poor coordination between management for military	Natural England's Conservation Objectives: Supplementary Advice for this site[49] identify the following dependencies: Woolmer Forest SAC is a large expanse of lowland heathland with associated habitats including valley mire, oligotrophic ponds, wet woodland, secondary woodland, acid grassland, scrub and conifer plantations. Situated in the western Weald, near Bordon in north Hampshire, the site is underlain by both Folkestone and Sandgate beds. The qualifying habitats occupy a range of niches, related to their position in the valleys and presence of water. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of transition mires and quaking bogs and its component species. This supporting habitat may be critical to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment.

[49] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Woolmer Forest: http://publications.naturalengland.org.uk/publication/4583742731452416

Site name Area, ha	Qualifying features and conservation objectives	Key vulnerabilities	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	– The supporting processes on which the qualifying natural habitats rely	training purposes and nature conservation management at Woolmer Forest and scope for significant gains with closer working between partners. The production of an integrated management plan is needed. **Air pollution** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection. The aerial pollution may be promoting changes in species composition of mires towards *Molinia* and sedge dominated systems rather than *Sphagnum* dominated; ponds may be losing characteristic aquatic plant assemblage partly because of increasing nutrient status. This most likely to be an issue at Woolmer Forest but could be a chronic problem at all sites in the complex. **Wildfire / arson** Wildfire is a natural hazard identified in the National Risk Assessment / Register and Community Risk Registers. Wildfires in the south of England are likely to increase as identified in the Climate Change Risk Assessment (CCRA). Wildfires can be a serious risk to human life, residential and commercial property and critical national infrastructures, as well as being a high risk threat to reptile populations, inverts and plant diversity resulting in significant habitat loss for Annex 1 birds. Open heath is the predominant risk (dry and wet heath, peat habitats) as well as young coniferous woodland. Impacts can last for many years for example by the wholesale removal of all gorse and heather seedbank.	

Appendix B

Other plans and projects with the potential for in-combination effects

Proposed focus of in-combination effects assessment in HRA

Table B.1: Plans with the potential for in-combination effects

Plan	Type of development / activity supported with the potential for in-combination effects
County/Sub-Regional Plans	
Partnership for Urban South Hampshire (PUSH) Spatial Position Statement (2016)[50] *[Note it is now the Partnership for South Hampshire (PfSH) and a new Spatial Strategy is in preparation which will be reviewed as it becomes available.]*	Various, including housing, employment, transport, infrastructure
Hampshire Local Transport Plan (2013)[51]	Transport
Hampshire Minerals and Waste Plan (2013)[52]	Minerals extraction/processing, waste management, transport
Local Plans	
South Downs National Park Local Plan (2019)[53]	Various, including housing, employment, community facilities, transport, infrastructure
Test Valley Borough Local Plan 2011-2029 (2016)[54]	
Basingstoke and Deane Local Plan 2011 to 2029 (2016)[55]	
East Hampshire District Local Plan: Joint Core Strategy (2014)[56]	
Havant Borough Core Strategy (2011)[57]	
The Portsmouth Plan (2012)[58]	
Fareham Local Plan Part 1: Core Strategy (2011)[59]	
Eastleigh Borough Local Plan 2016-2036 (2018)[60]	
Neighbourhood Plans	
Denmead Neighbourhood Plan (2011)[61]	Housing, community facilities, burial
Other Plans	
Southern Water, Water Resources Management Plan 2020-70[62]	Water abstraction, treatment and discharge

[50] Partnership for Urban South Hampshire (2016) PUSH Spatial Position Statement [online] Available at: https://www.push.gov.uk/wp-content/uploads/2018/05/PUSH-Spatial-Position-Statement-2016.pdf
[51] Hampshire County Council (2013) Hampshire Local Transport Plan 2011-2031 [pdf] Available at: http://documents.hants.gov.uk/transport/HampshireLTPPartALongTermStrategy2011-2031RevisedApril2013.pdf
[52] Hampshire County Council (2013) Hampshire Minerals and Waste Plan [online] Available at: http://documents.hants.gov.uk/mineralsandwaste/HampshireMineralsWastePlanADOPTED.pdf
[53] South Downs National Park Authority (2019) South Downs National Park Local Plan
[54] Test Valley Borough Council (2016) Test Valley Borough Local Plan 2011-2029 [online] Available at: https://www.testvalley.gov.uk/assets/attach/2446/Adopted-Local-Plan-2011-2029.pdf
[55] Basingstoke and Deane Borough Council (2016) Basingstoke and Deane Local Plan 2011 to 2029 [online] Available at: https://www.basingstoke.gov.uk/content/doclib/1592.pdf
[56]East Hampshire District Council (2014) East Hampshire District Local Plan: Joint Core Strategy [online] Available at: https://www.easthants.gov.uk/adopted-local-plan
[57] Havant Borough Council (2011) Havant Borough Core Strategy [online] Available at: https://www.havant.gov.uk/local-plan-core-strategy
[58] Portsmouth City Council (2012) The Portsmouth Plan [online] Available at: https://www.portsmouth.gov.uk/ext/documents-external/pln-portsmouth-plan-post-adoption.pdf
[59] Fareham Borough Council (2011) Fareham Local Plan Part 1: Core Strategy [online] Available at: https://www.fareham.gov.uk/pdf/planning/CoreStrategyAdopted.pdf
[60] Eastleigh Borough Council (2018) Eastleigh Borough Local Plan 2016-2036 [online] Available at: https://www.eastleigh.gov.uk/media/3484/final-local-plan-document-june-2018-print.pdf
[61] Denmead Neighbourhood Plan 2011-2031 [online] Available at https://www.winchester.gov.uk/planning-policy/winchester-district-local-plan-2011-2036-adopted/neighbourhood-plans/denmead-neighbourhood-plan-adopted-39-made-39-version
[62] Southern Water (2020) Water Resources Management Plan [online] Available at https://www.southernwater.co.uk/our-story/water-resources-planning/water-resources-management-plan-2020-70