Horsham Local Plan:
Habitats Regulations Assessment Screening Report

Client
Horsham District Council

Date:
30 January 2019

Essex County Council

About us

Place Services is a leading public sector provider of integrated environmental assessment, planning, design and management services. Our combination of specialist skills and experience means that we are uniquely qualified to help public organisations meet the requirements of the planning process, create practical design solutions and deliver environmental stewardship.

Our Natural Environment Team has expertise of arboriculture, biodiversity, countryside management and ecology. This multidisciplinary approach brings together a wide range of experience, whether it is for large complex briefs or small discrete projects. We aim to help our clients protect and improve the natural environment through their planning, regulatory or land management activities. This approach ensures that not only that our clients will fulfil their legal duties towards the natural environment, but they do so in a way that brings positive benefits to wildlife and people.

Address: County Hall, Market Road, Chelmsford, Essex, CM1 1QH

Contact no: 0333 013 6840

Email: ecology.placeservices@essex.gov.uk

Website: www.placeservices.gov.uk

VAT number: GB 104 2528 13

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Client	Horsham District Council
Client representative	Matthew Bates Planning Policy Team Manager

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Glossary of Acronyms

AA	Appropriate Assessment
DC	District Council
EA	Environment Agency
EC	European Commission
EU	European Union
Ha	Hectare
HDC	Horsham District Council
HRA	Habitats Regulations Assessment
IRZ	Impact Risk Zones (for SSSIs)
Km	Kilometre
LPA	Local Planning Authority
NE	Natural England
NPPF	National Planning Policy Framework
PRoW	Public Right of Way
RAMS	Recreational disturbance Avoidance and Mitigation Strategy
RIS	Ramsar Information Sheet
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Specific Scientific Interest
ZOI	Zone of Influence (evidenced)

Summary

A Habitats Regulations Assessment (HRA) has been prepared by Place Services for the Local Plan to enable Horsham District Council to comply with Regulation 63 of The Conservation of Habitats and Species Regulations 2017.

As the policies contained in the Local Plan cannot rule out Likely Significant Effects on Habitats (European) Sites at Stage 1 HRA Screening, there is a need for further assessment of impacts and Stage 2 Appropriate Assessment is necessary.

This report is the first stage of the HRA process: it aims to consider the elements of the Local Plan which need to be screened in as having the potential for Likely Significant Effect (LSE) and hence requiring further assessment of their potential to result in adverse effects on the integrity of one of more Habitats (European) Sites.

There are a wide range of potential impacts upon Habitats Sites which could arise as a result of components of the Local Plan; the following have been considered most likely to cause a Likely Significant Effect:

- Habitat loss and fragmentation / land take by development;
- Loss of functionally linked land (land outside the SPA and Ramsar site);
- Increase of any type of *disturbance*;
- Changes in *water availability, or water quality*;
- Changes in *atmospheric pollution levels*.

The following Habitats Sites have been scoped in as it has been identified that they may be affected by impacts relating to Horsham Local Plan.

- Arun Valley Ramsar Site;
- Arun Valley Special Protection Area;
- Arun Valley Special Area of Conservation;
- Ebernoe Common Special Area of Conservation; and
- The Mens Special Area of Conservation.
- Ashdown Forest Special Area of Conservation.

A number of policies within the plan require further assessment and consideration of mitigation: this will be undertaken at appropriate assessment stage. The complete list of sites considered to have potential for housing and/or employment screened in for further assessment is set out within Appendix 1. The complete list of policies screened in for further assessment is set out within Appendix 2. HRA Screening of Individual Policies

1. Introduction

1.1 The Purpose of This Report

This report is to provide a Habitats Regulations Assessment (HRA) for the Horsham Local Plan in accordance with Article 6(3) and (4) of the EU Habitats Directive and with Regulation 63 of the Conservation of Habitats and Species Regulations 2017.

The Conservation of Habitats and Species Regulations require the Competent Authority (in this instance Horsham District Council) to undertake a HRA before making a decision about permission for any plan or project that may result in an adverse effect on the integrity of a European Site[1] as defined in the National Planning Policy Framework (NPPF, 2018).

In line with the Court judgement (CJEU People Over Wind v Coillte Teoranta C- 323/17), mitigation measures cannot be taken into account when carrying out a HRA Screening assessment to decide whether a plan or project is likely to result in significant effects on a Habitats (Natura 2000) Site. As the policies relate to land within the Zone of Influence (ZOI) for a number of Habitats Sites, it is not possible to rule out Likely Significant Effects, without mitigation in place.

The recent Court judgement (CJEU Holohan C- 461/17) now imposes more detailed requirements on the competent authority at Appropriate Assessment stage:

1. […] 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.

2. […] 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.

3. […] 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.

This report therefore provides (plan level) Stage 1 HRA Screening and Stage 2 Appropriate Assessment as required by Regulation 63 of The Conservation of Habitats and Species Regulations 2017.

[1] Habitats Site: Any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations and those listed in paragraph 176 of the NPPF (2018). This includes potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on Habitats Sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The Conservation of Habitats and Species Regulations 2017 are commonly known as the 'Habitats Regulations'. Requirements are set out within Regulations 63 and 64 of the Habitats Regulations, where a series of steps and tests are followed for plans or projects that could potentially affect Habitats Sites. The steps and tests set out within Regulations 63 and 64 are commonly referred to as the 'Habitats Regulations Assessment' process. The Government has produced core guidance for competent authorities and developers to assist with the HRA process. This can be found on the Defra website. http://www.defra.gov.uk/habitats-review/implementation/process-guidance/guidance/sites/

It demonstrates how the *Plan* or *Project* is compatible with EU obligations, which includes the need to undertake a HRA and forms a plan level HRA as required by Regulation 63 of The Conservation of Habitats and Species Regulations 2017.

Plans and projects should only be permitted when it has been proven that there will be no adverse effects on the integrity of Habitats Sites. The legislation can allow projects that may result in negative impacts on the integrity of a site if the competent authority is satisfied that, there are no alternative solutions, the plan or project must be carried out for Imperative Reasons of Overriding Public Interest (IROPI) (Regulation 64). However, this will require suitable compensation to ensure that the overall coherence of the series of such sites is retained.

The HRA should be undertaken by the 'competent authority' - in this case Horsham District Councils - and Place Services has been commissioned to complete this on behalf of the Council. The HRA also requires close working with Natural England as the statutory nature conservation body.

This HRA report aims to:

- Consider the elements of the Plan screened in as having potential for Likely Significant Effect (LSE) for further assessment of their potential to result in adverse effects on the integrity of the Habitats Sites.
- Assess the potential for in combination effects from other projects and plans in the area.
- Identify if there are any outstanding issues that need further investigation.

It is not considered that there are any serious limitations to this HRA.

1.2 Horsham District Local Plan 2020

The current Horsham District Local Plan is the Horsham District Planning Framework 2015. The main priority areas are sustainable development, housing and communities, and the environment. As is required by legislation, this document is now under review. The updated local plan will, when adopted, provide the mechanism to enable the delivery of the spatial elements of vision and priorities between 2019 and 2036.

The majority of Horsham District is located within the Gatwick Diamond economic area which extends from Croydon in the north, around Gatwick Airport and down the A23 corridor to the south coast. Residents of Horsham District contribute to this wider regional economy. The NPPF requires that Local Planning authorities and county councils are under a 'Duty to Co-operate' with each other and other key bodies, on strategic matters that cross administrative boundaries. This can include a range of issues from infrastructure provision, economic and housing growth to strategic recreation routes. Where appropriate, the Local Plan will consider the needs and requirements of other authorities and well as having regard to other development plans which cover the district.

The Horsham District Local Plan (Regulation 18) sets out the Vision, Objectives and Strategy for the District over an 18-year period (2019-2036). Of particular relevance to HRA screening, the Plan identifies the Council's options for the overall amount of housing development to plan for on an annual basis, and, to the extent possible under the provisions of the National Planning Policy Framework 2019, the locations where this development could take place. The Plan comprises the vision and objectives for future development and change within Horsham District from 2019-2036. It includes policies that

set out the strategic approach to growth and distribution of development across the District in order to achieve a sustainable development. These include strategic housing policies, site allocation policies for housing and/or employment, and development management policies.

1.3 Habitats (European) Sites

Habitats Sites is the term used in the NPPF (2018) to describe the network of sites of European designated nature protection areas. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and Habitats. The sites are designated under the European Union (EU) Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds) and the EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora).

The Birds Directive requires the establishment of Special Protection Areas (SPAs). The Habitats Directive similarly requires Special Areas of Conservation (SACs) to be designated for other species, and for Habitats. Wetlands of International Importance (Ramsar sites) are also part of the Habitats (Sites) network. This is because all SPAs and SACs are comprised of Sites of Special Scientific Interest (SSSIs) and all Ramsar sites in England are SSSIs. Together, SPAs, SACs and Ramsar Sites make up the Habitats Sites in England. The following offers a description and explanation of SPAs, SACs and Ramsar Sites.

The following table (Table 1) offers a description and explanation of SPAs, SACs and Ramsar site

Table 1. Description and Explanation of SPAs, SACs and Ramsar Sites

Special Protection Areas (SPAs)
SPAs are areas which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within EU countries. Example: The Arun Valley SPA is internationally important for wintering waterfowl. *Legislation: EU Birds Directive.*
Special Areas of Conservation (SACs)
SACs are areas designated to protect habitat types that are in danger of disappearance, have a small natural range, or are highly characteristic of the region; and to protect species that are endangered, vulnerable, rare, or endemic. Example: The Mens SAC is designated as a woodland which features Barbastelle bat maternity roosts. *Legislation: EU Habitats Directive.*
Ramsar Sites (Wetlands of International Importance)
Ramsar Sites are designated to protect the biological and physical features of wetlands, especially for waterfowl Habitats. Ramsar sites often overlap with SACs and SPAs and UK planning policy determines that they should be accorded the same importance when developments are proposed. Example: Chichester and Langstone Harbour Ramsar is an estuarine system on the south coast of England, 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. *Legislation: Ramsar Convention (1971) – Wetlands of International Importance.*

2. Method and Approach

HRAs are a statutory requirement and should be undertaken by the competent authority to ensure that it plans, and projects comply with EU Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds) and the EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). In England and Wales these are transposed into The Habitats Regulations 2017.

HRA is the process by which the requirements of the Habitats Regulations 2017 are implemented and ensures that plans or projects will not adversely affect Habitats Sites.

The legislation does not require a fixed method, but case law has shaped the way it should be undertaken. The HRA is a sequential process and it is generally divided into four stages, which are set out below in
Figure 1. Outline of the Four Stage Approach to the Assessment of Plans under the Habitats Regulations

. Each of the stages contains a number of sequential steps, comprising the tests or procedures required by the Habitats Directive. This report addresses Regulation 63 of Habitats Regulations 2017 which covers the first stage, i.e. HRA Screening.

below shows the recommended approach taken in the DTA Publications Handbook[2]. This has been used in the approach of this HRA, as shown in
Figure 1. Outline of the Four Stage Approach to the Assessment of Plans under the Habitats Regulations

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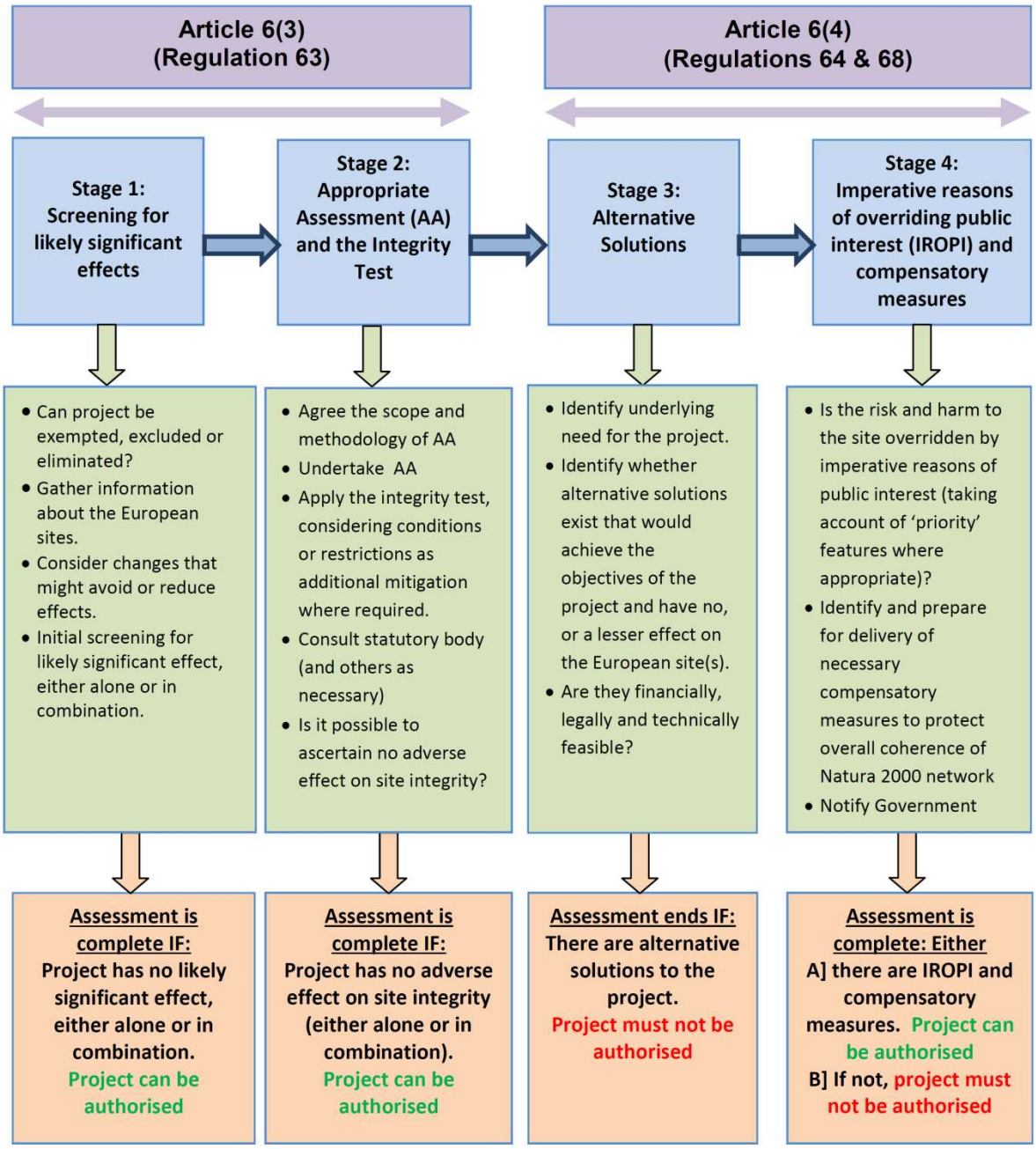
[2] The DTA Publications Handbook can be found at www.dtapublications.co.uk

Figure 1. Outline of the Four Stage Approach to the Assessment of Plans under the Habitats Regulations



Plans should not contain proposals that would be vulnerable to failure under the Habitats Regulations at project level assessment stage, as this would be regarded as 'faulty planning'.

'Significant effects' has been defined through case law. A significant effect is any effect that would undermine the conservation objectives for the qualifying features of Habitats Sites potentially affected, alone or in combination with other plans or projects. There must be a causal connection or link between the Local Plan and the qualifying features of the site(s) which could result in possible significant effects on the site (s). Effects may be direct or indirect and a judgement must be taken on a case-by-case basis. The decision as to whether or not a potential impact is significant depends on factors such as: magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. So, what may be significant in relation to one site may not be in relation to another.

An effect which is not significant can be described as 'insignificant', 'de minimis' or 'trivial'- i.e. it would not undermine the conservation objectives.

A risk-based approach involving the application of the precautionary principle has been used in the assessment. A conclusion of 'no significant effect' was only reached where it was considered very unlikely, based on current knowledge and the information available, that a proposal in the Local Plan would have a significant effect on the integrity of a Habitats Site.

Key advice guidance and information has also come from the following sources:

- DTA Publications Handbook: https://www.dtapublications.co.uk/
- Essex Coast Recreational disturbance Avoidance and Mitigation Strategy (RAMS) emerging Strategy
- HRAs of neighbouring authorities Local Plans
- Extensive experience of producing other HRAs
- Government information regarding Habitats Sites and their 'zones of influence', e.g. www.magic.gov.uk

2.1 Assessment of Likely Significant Effects

The screening stage identifies whether the Local Plan may result in a Likely Significant Effect to any Habitat Site, alone or in combination with other plans or projects. The screening process should identify all aspects of the Local Plan that are:

- Exempt from assessment
- Excluded from assessment
- Eliminated from further assessment
- Have no *Likely Significant Effects*, alone or in combination with other plans or projects and therefore be screened out
- Screened in as it is not possible to rule out *Likely Significant Effects*. In line with the 2018 Court judgment (CJEU People Over Wind v Coillte Teoranta C-323/17) mitigation measures cannot be taken into account when carrying out a screening assessment. Consequently, any aspect of the Local Plan which cannot be ruled out as having *Likely Significant Effects* should continue to Stage 2 Appropriate Assessment.

Habitats sites which have been included for assessment are those which are within the ZOI for the underpinning Site of Special Scientific Interest (SSSIs) as identified on MAGIC www.magic.gov.uk.

It has been established that this Plan requires an HRA for the following reasons:

Can the plan be exempt?
No, the Local Plan is not directly connected with or necessary to management of any Habitats Sites.

Can the plan be excluded?
No, the Local Plan cannot be excluded as it falls within the definition of being a plan within the Habitats Regulations.

Can the plan be eliminated?
No, the Local Plan as a whole cannot be eliminated as it proposes a number of policies which may have a Likely Significant Effect on one or more Habitats Site. However, individual polices can be eliminated.

2.2 Identifying Habitats Sites, their Conservation Objectives and Qualifying Features

The qualifying features and conservation objectives of the Habitats Sites, together with current pressures on and potential threats, was drawn from the Standard Data Forms for SACs and SPAs and the Information Sheets for Ramsar Wetlands as well as Natural England's Site Improvement Plans (SIP) and the most recent conservation objectives. An understanding of the designated features of each Habitats Site and the factors contributing to its integrity has informed the assessment of the potential Likely Significant Effects of the Local Plan.

Key sources of the Habitats Sites information were found at:

- JNCC: http://jncc.defra.gov.uk/
- Site Designation features and Conservation Objectives- Designated Sites View: https://designatedsites.naturalengland.org.uk/
- Site Improvement Plans, e.g.: http://publications.naturalengland.org.uk/publication/6270737467834368
- MAGIC (the Multi Agency Geographic Information website): www.magic.gov.uk
- "Managing Natura 2000 sites- The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_._nov_2018_endocx.pdf

The list of Habitats Sites, their qualifying features and conservation objectives can be found in

Appendix 3. Characteristics of Habitats sites

Site name	Area (ha)	Qualifying Features	Conservation objectives (only available for SACs & SPAs)	Key vulnerabilities / factors affecting site integrity
Arun Valley The Arun Valley in West Sussex is located just north of the South Downs escarpment. It consists of low-lying grazing marsh, largely on alluvial soils, but with an area of peat derived from a relict raised bog. Variation in soils and water supply lead to a wide range of ecological conditions and hence a rich flora and fauna. Southern parts of the Arun Valley are fed by calcareous springs, while to the north, where the underlying geology is Greensand, the water is more acidic. The history of management of fields, and their water levels, determines the plant communities present, with drier fields dominated by meadow grasses, Crested Dog's-tail *Cynosurus cristatus* and Perennial Rye-grass *Lolium perenne*. In wetter areas, rushes, sedges and Tufted Hair-grass *Deschampsia cespitosa* are more frequent. Ungrazed fields have developed into fen, scrub or woodland. Fen areas consist of Common Reed *Phragmites australis*, Reed Sweet-grass *Glyceria maxima* and Greater Tussock-sedge *Carex paniculata*, often with scattered elder *Sambucus* sp. and sallow scrub. On firmer ground, there is Alder *Alnus glutinosa*, Willow *Salix* sp., Birch *Betula* sp., and sallow, with Oak *Quercus robur* and Hazel *Corylus avellana* woodland on the driest ground. The ditches and margins between grazing marsh fields have an outstanding aquatic flora and invertebrate fauna. The Arun Valley supports important numbers of wintering waterbirds, which feed in the wetter, low-lying fields and along ditches. The Arun Valley SPA is situated within the South Downs National Character Area (NCA Profile 125).				
Arun Valley Ramsar	528.6	**Ramsar criterion 2** The site holds seven wetland invertebrate species listed in the British Red Data Book as threatened. One of these, *Pseudamnicola confusa*, is considered to be endangered. The site also supports four nationally rare and four nationally scarce plant species **Ramsar criterion 3** In addition to the Red Data Book invertebrate and plant species, the ditches intersecting the site have a	N/A	N/A

		particularly diverse and rich flora. All five British duckweed (*Lemna* species), all five water-cress (*Rorippa* species), and all three British water milfoils (*Myriophyllum* species), all but one of the seven British water dropworts (*Oenanthe* species), and two-thirds of the British pondweeds (*Potamogeton* species) can be found on site. **Ramsar criterion 5** Assemblages of international importance: • Species with peak counts in winter- 13774 waterfowl (5 year peak mean 1998/99-2002/2003) Species/populations identified subsequent to designation for possible future consideration under criterion 6: • Species with peak counts in winter: Northern pintail , *Anas acuta*, NW Europe 641 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)		
Arun Valley SAC	487.48	**Qualifying Species:** • Little whirlpool ram's-horn snail *Anisus vorticulus*	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation	**Inappropriate water levels** Environment Agency is ceasing to administer Internal Drainage Board (IDB) ditches, and water control structures, with

			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.	the likelihood that management will revert to landowners/Local Authorities. This has implications for management/clearance of the ditches and maintenance of water controlling structures. There could be impacts on water levels, the marginal and in-channel flora and associated species. *Anisus vorticulus* is not known to tolerate occasional ditch drought (M.Willings, Pers Comm 2014). Bewick's Swan and the majority of water bird assemblage species for which the site is classified require large bodies of in field water and water levels maintained within the ditch systems. The Environment Agency are reviewing management of river bank defences adjacent to the Special Protection Area/Site of Community Importance in the medium term (beyond 10 years) as part of the Lower Tidal River Arun Strategy (LTRAS) project. If the banks are not maintained, there will be a permanent increase in water levels, with added risk of changes in salinity, water levels, and increasing water pollution (rivers Stor and Arun failing for phosphorus levels). *Anisus vorticulus* is not known to have a tolerance for elevated salinity levels. The majority of

				Ramsar plant species (also key supporting habitat for *A.vorticulus* and Bewick's swan) are intolerant of poor water quality. Impacts of increased salinity largely unknown. **Water pollution** There's a risk that undetected deterioration in the quality of water entering the ditch systems is impacting upon SPA/SCI/Ramsar species. *Anisus vorticulus* requires good water quality. An important food source for Bewick's swan is *Potamogeton* spp. (pond weeds), which also requires good water quality, as do the majority of aquatic plant species for which the Ramsar is designated, and which is the essential supporting habitat for *A.vorticulus*. The rivers Arun and Stor are failing on phosphate levels. Directly linked to this is point source pollution from a sewage treatment works upstream of the site. There may also be a risk of increased levels of nutrients entering the site through flooding, especially if the river banks are not maintained (see issue of changes in water levels). The classified bird species are also vulnerable to increased levels of nutrient enrichment as there is an

				increased likelihood of certain disease. Increase in growth of vegetation from sustained nutrient enrichment can make the habitat unsuitable for many bird species (Literature Review, Mott McDonald, 2006). Diffuse pollution from agricultural run-off is likely to be contributing to the phosphate levels (this issue is managed via Catchment Sensitive Farming). **Inappropriate ditch management** This is linked to issue 1 and possible cessation or changes in the method and frequency of ditch management/clearance. *Anisus vorticlus* is sensitive to changes in, and cessation of ditch management, as are the marginal and in-channel flora. The management requirements of *A. vorticulus* are little understood, so further research is required. Further surveys are also required- there has not been a full survey of *A. vorticulus* at Amberley since 1997. A full survey has been undertaken at Pulborough 2013/14, but repeat surveys will be necessary. **Disturbance** The nature, scale, timing and duration of

				some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures
Arun Valley SPA	530.42	**Qualifying species**: • A037, Bewick's swan; *Cygnus columbianus bewickii* (non-breeding) During the time of site notification, the SPA supported 115 individuals representing at least 1.6%	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;	**Similar to the SAC site (above)**

		of the wintering population in Great Britain (5 year peak mean 1992/93 - 1996/97). **Qualifying assemblage of species**: During the non-breeding season the SPA regularly supports an assemblage of waterfowl with the area regularly supporting 27,241 individual waterfowl (5 year peak mean for 1992/93 to 1996/97) including: • Shoveler; *Anas clypeata*, • Teal; *Anas crecca*, • Wigeon; *Anas penelope*, • Bewick's Swan; *Cygnus columbianus bewickii* **Qualifying habitats (which support wintering birds):** • MG5 *Cynosurus cristatus-Centaurea nigra* lowland meadows • MG13-related; Inland wet grassland • S5 *Glyceria maxima* (Reed Sweet-grass) swamp • S22 *Glyceria fluitans* (floating-sweet grass) water-margin vegetation	– 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.	

		• Network of ditch systems		
Ashdown Forest The underlying geology of Ashdown Forest is mostly sandstone, predominantly the Lower Cretaceous Ashdown Formation. This forms a layer varying from 500 feet (150 m) to 700 feet (210 m) thick, consists of fine-grained, silty interbedded sandstones and siltstones with subordinate amounts of shale and mudstone. It is the oldest Cretaceous geological formation that crops out in the Weald. The underlying sandstone geology of the Ashdown Sands, when combined with a local climate that is generally wetter, cooler and windier than the surrounding area owing to the forest's elevation, which rises from 200 feet (61 m) to over 700 feet (210 m) above sea level, gives rise to sandy, largely podzolic soils that are characteristically acid, clay, and nutrient-poor. On these poor, infertile soils have developed heathland, valley mires and damp woodland. These conditions have never favoured cultivation and have been a barrier to agricultural improvement. Ashdown Forest's origins lie as a medieval hunting forest created soon after the Norman conquest of England. Ashdown Forest has a rich archaeological heritage. It contains much evidence of prehistoric human activity, with the earliest evidence of human occupation dating back to 50,000 years ago. There are important Bronze Age, Iron Age and Romano-British remains. Ashdown Forest contains one of the largest single continuous blocks of lowland heath in south-east England, with both dry heaths and, in a larger proportion, wet heath. The survival of the forest's extensive heathlands has become all the more important when set against the large-scale loss of English lowland heathland over the last 200 years; within the county of East Sussex, heathland has shrunk by 50% over the last 200 years, and most of what remains is in Ashdown Forest. The damming of streams, digging for marl, and quarrying have produced several large ponds in a number of areas of the forest. The site supports important assemblages of beetles, dragonflies, damselflies and butterflies, including the nationally rare silver-studded blue *Plebejus argus*, and birds of European importance, such as European nightjar *Caprimulgus europaeus*, Dartford warbler *Sylvia undata* and Eurasian hobby *Falco subbuteo*.				
Ashdown Forest SAC	2729	**Qualifying habitats**: • H4010 Northern Atlantic wet heaths with *Erica tetralix* • H4030 European dry heaths **Qualifying species:** • S1166 Great crested newt; *Triturus cristatus*	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;	**Change in land management** Only one third of the heathland is currently grazed. Favourable condition requires a diverse vegetation structure and grazing, in combination with some mechanical management, can achieve this. The heathland would be improved by more cattle, less sheep and a few ponies. The ability to target animals to specific areas would also be beneficial to the heathland.

			– 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.	The sheep will often tend to congregate close to the roads and their tight grazing has resulted in a grass dominated sward in these areas, with some areas further away from the roads only lightly grazed and dominated with *Molinia* tussocks. **Air Pollution: impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. Vegetation is becoming increasingly grass dominated where previously it was heather dominated. **Public Access/Disturbance** There is potential for increased visitor pressure (in particular dogs off leads) to impact on breeding birds, particularly Nightjar which is a ground nesting bird, but also Dartford Warbler as it can nest low in the gorse. There is some work going on to reduce this pressure, which is currently funded by developers. Long-term monitoring is needed to establish impacts, alongside actions to mitigate the disturbance in partnership with the existing work. **Hydrological changes** The botanical diversity of the wet heath

				(and valley mire systems and bogs encompassed within it) has declined over the last few decades. We don't have sufficient information/evidence/survey to understand why this is the case. It is also suspected that *Rhynchospora alba* SAC habitat is present at Ashdown Forest, but the wet heath/bogs have declined in recent years and our current level of survey information/evidence is inadequate.
Ashdown Forest SPA	3207.08	Qualifying species: • A302 Dartford warbler; *Sylvia undata* (breeding) • A224 Nightjar; *Caprimulgus europaeus* (breeding)	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,	**Similar to the SAC (above)**

			– The distribution of the qualifying features within the site.	
Castle Hill This chalk grassland consists of a mosaic of calcareous semi-natural dry grasslands, notably *Festuca ovina – Avenula pratensis* grassland, *Bromus erectus* grassland and *Brachypodium pinnatum* grassland. Castle Hill's important assemblage of rare and scarce species includes early spider-orchid *Ophrys sphegodes* and burnt orchid *Orchis ustulata*. The colony of early spider-orchid is one of the largest in the UK. The site also supports a colony of Early gentian *Gentianella angelica.*				
Castle Hill SAC	114.68	**Qualifying habitats:** • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites). Dry grasslands and scrublands on chalk or limestone (important orchid sites) **Qualifying species**: • Early gentian; *Gentianella anglica*	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	**Undergrazing** There is insufficient cattle grazing in parts of the site leading to encroachment by gorse and coarser grasses, such as Tor grass, which can shade out the important chalk grassland plants, including orchids and early gentian **Fertilizer use** Management of land bordering the SAC; All of the arable parcels surrounding the site which slope down to the SAC boundary, when cultivated, pose potential threats through erosion and leaching/run-off. This could lead to loss of species diversity due to soil enrichment. **Air Pollution: impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant

			and the habitats of qualifying species rely – The populations of qualifying species, and, – The distribution of qualifying species within the site	critical loads. The effects of this could cause: an increase in tall grasses, decline in diversity, increased mineralisation, surface acidification or N leaching.
Chichester and Langstone Harbours This site comprises part of the Solent. 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. 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 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.				
Chichester and Langstone Harbours Ramsar	5810.03	**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** Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: • Ringed plover; *Charadrius hiaticula*, 853 individuals (5 year peak mean 1998/9-2002/3) • Black-tailed godwit; *Limosa limosa islandica*, 906 individuals, (5 year peak mean 1998/9- 2002/3) • Common redshank; *Tringa totanus totanus,* 2577 individuals (5 year peak mean 1998/9- 2002/3) Species with peak counts in winter: • Dark-bellied brent goose; *Branta bernicla bernicla,* 12987 individuals (5 year peak mean 1998/9- 2002/3) • Common shelduck; *Tadorna tadorna*, 1468 individuals, (5 year peak mean 1998/9-2002/3)		

		• Grey plover; *Pluvialis squatarola*, 3043 individuals, (5 year peak mean 1998/9-2002/3) • Dunlin; *Calidris alpina alpina*, 33436 individuals, (5 year peak mean 1998/9-2002/3)		
Chichester and Langstone Harbours SPA	5810.95	Qualifying species: • A046a – Dark bellied brent goose; *Branta bernicla bernicla* (Non-breeding) • A048 Common shelduck; Tadorna tadorna; (Non-breeding) • A050 Eurasian wigeon; (Anas penelope Non-breeding) • A052 Eurasian teal; *Anas crecca* (Non-breeding) • A054 Northern pintail; *Anas acuta* (Non-breeding) • A056 Northern shoveler; *Anas clypeata*; (Non-breeding)	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.	**Public access and disturbance** Many human activites in the area can disturb birds. This includes activities such as: walking; dog walking; bird watching; boating; kayaking; kite surfing; hang gliding; paramotors; jet skis; wildfowling; model helicopters/aircraft; boat mooring, and Hovercraft. Recreational activities can also 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. There is also an impact on birds due to the loss of

		• A069 Red-breasted merganser; *Mergus serrator* (Non-breeding) • A137 Ringed plover; *Charadrius hiaticula* (Non-breeding) • A141 Grey plover; *Pluvialis squatarola* (Non-breeding) • A144 Sanderling; *Calidris alba*; (Non-breeding) • A149 Dunlin; *Calidris alpina alpina* (Non-breeding) • A157 Bar-tailed godwit; *Limosa lapponica* (Non-breeding) • A160 Eurasian curlew; *Numenius arquata* (Non-breeding) • A162 Common redshank*; Tringa totanus* (Non-breeding) • A169 Ruddy turnstone; *Arenaria interpres*; (Non-breeding) • A191 Sandwich tern; *Sterna sandvicensis* (Breeding) • A193 Common tern; *Sterna hirundo* (Breeding)		habitat for feeding, roosting and breeding. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands, thus losing habitat for some breeding waders of the waterbird assemblage. 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** Dredges (inc. Hydraulic), Benthic trawls and seines and Shore-based activities are categorised as 'Red' for these interest features (and specifically the sub-features: Intertidal muddy sand communities;

		• A195 Little tern; *Sterna albifrons* (Breeding) • Waterbird assemblage		Subtidal eelgrass Zostera marina beds as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS), and requisite mechanisms are being or will be implemented by Southern IFCA and Sussex IFCA. Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs require assessment and (where appropriate) management. This assessment will be undertaken by SIFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site. 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 habitat and bird species 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). 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 & Pilotage. **Changes in species distribution** Many waders and wildfowl are decreasing in the Solent probably as they move north and east under national trends. Some fish, such as Sand eels, may be moving their breeding grounds resulting in less food availability for breeding terns. Invertebrate populations in the intertidal muds are changing and this may disadvantage some wintering wader species. Desmoulin's Whorl Snail has decreased dramatically. Areas of salt-marsh are eroding and decreasing resulting in decreasing breeding gulls and terns as their habitat decreases and decreasing plant species of salt-marshes. **Climate change** Climate change has impacts upon coastal

				species, in that gull and tern colonies are more frequently washed out with rising sea levels when storm surges cause flooding to habitats. **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/SPA . Percolation of sea water through sea walls is causing saline intrusion into non-saline grassland habitats and changing them **Change to site conditions** There is an increasing loss of salt-marsh 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. **Other** SAC/SPA boundaries may not cover the extent of all Annex 1 and Annex 2 features and/or supporting habitats **Direct land take to development** Private sea defences are causing disruption to the natural processes of allowing erosion to move sediments around the SAC. **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. **Changes to 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 predator 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 impacts from third parties** 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. Military helicopters cause disturbance to wintering birds. 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
Duncton to Bignor Escarpment The site itself is an example of mature beech *Fagus sylvatica* woodland located on a steep scarp face of the South Downs. The site has developed over chalk which is overlain in places by a clay-with-flints capping. The resulting soil conditions have produced beech dominated mosaic with: ash *Fraxinus excelsior* woodland, scrub and chalk grassland. The high habitat quality present at Duncton to Bignor Escarpment has allowed many rare plants to flourish such as white helleborine *Cephalanthera damasonium*, yellow bird's nest *Monotropa hypopitys*, and limestone fern *Gymnopcarpium robertium*. The scrubby woodland is also home to the largest British colony of the rare snail *Helicodonta obvoluta*, and a notable assemblage of rare moth species, many of which are dependent on the scrubby woodland at Duncton Down.				
Duncton to Bignor Escarpment SAC	214.47	**Qualifying habitats** • H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils	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	No current issues affecting the Natura 2000 feature(s) have been identified on this site

			– The supporting processes on which the qualifying natural habitats rely	
Ebernoe Common Ebernoe Common is an extensive complex of ancient woodland and former wood pasture in West Sussex, five miles south-east of Haslemere. The central core of the site, approximately a third of the total area, forms Ebernoe Common National Nature Reserve. It is a varied site with a range of woodland communities and age structures which have developed due to differences in underlying soils and past management. This range of conditions together with a long continuity of woodland cover has in turn resulted in the site supporting an outstanding diversity of species: Barbastelle and Bechstein's bats, which favour ancient woodland, breed in the site because it provides suitable roosting and feeding habitats. While Bechstein's feed exclusively in the woodland, Barbastelles commute into the surrounding countryside using the woodland corridors which branch out from the site. In addition, the native trees, particularly those with old growth characteristics, support rich lichen and fungal communities, including a number of rare and scarce species, and the woodland complex as a whole supports a diverse breeding bird assemblage.				
Ebernoe Common SAC	234.05	**Qualifying habitats** • H9120 Atlantic acidophilous beech forests with Ilex **Qualifying species** • S1308 Barbastelle bat; *Barbastella barbastellus* • S1323 Bechstein's bat; *Myotis bechsteini*	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	**Forestry and woodland management** Woodland management for SSSI features (lichens, invertebrates) which require higher light levels may have a significant impact on the bat species. Additionally some management of the beech woodland is necessary in places. More information about potential impacts on bat species is required. **Offsite habitat availability/ management** The protected site is limited woodland core area where breeding colonies are known to exisit. The bats, however, rely on commuting and foraging habitat outside of

			– 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.	the site and this needs to be better understood, protected and appropriately managed. It would also be useful to understand how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Habitat fragmentation** Ebernoe Common and The Mens are similar SACs which lie within 5km of each other. It is likely that the bat populations of both sites are genetically linked. Barbastelle bats are known to commute more than 5km and there is continuous woodland cover between the sites to allow Bechstein's to travel. There is a case to investigate whether the two sites should be treated within one overarching Natura 2000 site. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations.

				Changes in land management Land management in the surrounding countryside will have an impact on foraging areas for Barbastelle bats but at present the forage requirements (how much habitat and of what type) are poorly understood. Ultimately, inadequate foraging will impact on breeding success within the site. Further investigation of foraging and bat commuting route requirements of notified bat species is required, informing better management of mature hedgerows which need to be restored and maintained in the area around the site. **Hydrological changes** Recent research has shown that water availability (ponds and streams) within Bechstein's breeding sites is likely to be important. Housing development around the site and hydrological changes in the local area could impact on the availability of these habitats **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of

				harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation. **Public access and disturbance** It is known that light pollution has an impact on both myotis species, ie Bechstein's and Horseshoe bats. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat movements/roosting availability in and around the SAC areas.

Kingley Vale

Kingley Vale is approximately 208.5 hectares in size and is situated within both the South Downs National Character Area (NCA Profile 125) and National Park. The site has great archaeological significance, hosting 14 scheduled ancient monuments including Bronze Age and Roman earthworks such as: burial mounds, cross dykes, a camp and a field system. The Yew *Taxus baccata* woodlands of Kingley Vale are considered to be among the largest and best in Europe; it also contains an important grove of ancient Yews some of which are at least 500 years old. The Yew woodland is considered to be of such high quality in part because of the presence of successional stages from scrub grassland to mature woodland, which are provide a high variation in woodland structure and function, which is important for many breeding birds and invertebrates including: Red kites *Milvus milvus*, the forester moth *Adscita statices* and the nationally rare fly *Doros sonopseus*. The remainder of woodland which is not pure yew woodland is mixed woodland chiefly comprised of yew, ash and oak. In addition to woodland the site contains three nationally uncommon habitats: chalk grassland, juniper scrub and Yew scrub. The chalk grassland in particular is rich in flowering plants dominated by sheep's fescue *Festuca ovina*, meadow oat *Avenula pratensis* and salad burnet *Sanguisorba minor*. Several uncommon plants are also present, including: autumn gentian *Gentianella amarella*, roundheaded rampion *Phyteuma tenerum*, bee orchid *Ophrys apifera*, autumn lady's tresses *Spiranthes spiralis* and fly orchid *Ophrys insectifera*.

Kingley Vale SAC	208.5	**Qualifying habitats**: • H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone. • H91J0. Taxus baccata woods of the British Isles; Yew-dominated woodland	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: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads

Lewes Down Lewes Downs is an isolated block of downland which forms part of the South Downs. It is important for the extremely rich chalk grassland and scrub vegetation, which contains a number of southern and oceanic-southern species as well as a nationally rare orchid. The site also supports a rich invertebrate fauna including a rare moth, and an important breeding community of downland birds. This block of downland has a south-facing scarp slope which is an unusual feature within the South Downs. The majority of the site comprises unimproved species-rich chalk grassland, developed on steep slopes over thin rendzina soils. Other habitats which add to the diversity and interest of the site include areas of mixed scrub and semi-natural woodland				
Lewes Down SAC	146.86	**Qualifying habitats** • H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)	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	**Game management: pheasant rearing** High numbers of pheasants can have adverse impacts on invertebrate communities, in particular, the larvae of important Lepidoptera species. This is particularly acute around areas with feeding bins; in this case, the woodland shaws. Inappropriate management of the grassland communities, in particular, undergrazing and allowing scrub to invade has negative impacts on the plant community. Such management can occur where the grassland community is being used for 'driving' birds to shoot. **Undergrazing** The sward over much of Mt. Caburn tends to be uniform. A change to cattle or native pony grazing could help to improve this situation.

				Public access and disturbance Unconsented activities, including large-scale organised gatherings can create serious damage through trampling, particularly where these are concentrated in small areas of the site. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads
Mole Gap to Reigate Escarpment The Mole Gap to Reigate Escarpment SAC occupies an extensive area of the Chalk ridge which forms the escarpment of the North Downs in Surrey. There is a wide range of aspect, gradient and soil types which gives rise to a wide diversity of habitat type. A striking feature of the landscape is the very steep valley cut through the escarpment by the River Mole, giving rise to natural chalk cliffs, a rare feature in the UK. The landscape also includes an extensive area of south-facing chalk escarpment, as well as several dry valleys and elevated, gently-sloping ground on the plateau. The character of the landscape is predominantly rural and unspoilt by development. It is a highly wooded landscape but with extensive areas of open downland, particularly on the south facing scarpment. There is a wide range of soil depth and soil type ranging from very thin, highly alkaline, chalky soil through moderately nutrient-rich and moisture-retentive but still alkaline soils on the less steeply sloping areas through to poorly draining, acidic soils formed on deep deposits of Clay-with-Flints, a deposit derived from Tertiary and Cretaceous age sediments of clay-rich, silty or sandy material containing unworn flint. The steep slopes and areas of chalk scree support unusual vegetation types with an assemblage of scarce lichens. The habitat mosaic includes very species-rich chalk grassland, beech, ash and yew woodland, mixed chalk scrub including juniper, and on the plateau, an extensive area of ‘chalk heath’ where chalk-loving plants grow alongside those typically associated with acidic soils. There is evidence of human activity throughout the landscape with numerous ancient limekilns, mines, quarries, flint pits and sunken trackways.				
Mole Gap to Reigate	887.68	**Qualifying habitats** • H4030 European dry heaths	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation	**Disease** Box blight has been recorded on the site and has been shown to be spreading and affecting the SAC feature “stable steppe

Escarpment SAC		• H5110 Stable steppe formation with *B. sempervirens* on rock slopes • H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites") • H6211 Dry grasslands and scrubland facies: important orchid sites • H9130 *Asperulo-Fagetum* beech forests • H91J0 *Taxus baccata* woods of the British Isles **Qualifying species** • S1166 Great crested newt, *Triturus cristatus* • S1323 Bechstein's bat, *Myotis bechsteini*	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.	formation with *B. sempervirens* on rock slopes". This is the only native site for this feature. **Inappropriate scrub control** Scrub is encroaching onto the chalk grassland. This can quite quickly shade out more delicate and rare plant species found on the chalk slopes, and any associated insect species are also therefore negatively impacted on. **Change in land management** To maintain a species-rich sward and its associated insects and other invertebrates, chalk grasslands require active management - some parts of the site do not have appropriate active management. Without it the grassland will rapidly become dominated by rank grasses, such as Tor-grass. Together with the build-up of dead plant matter, less vigorous species will be suppressed and the diversity of the site will decrease. Eventually, the site will scrub over. Traditionally, management is achieved by grazing. The timing will vary both between and within sites, according to local conditions and specific species requirements.

				Public access and disturbance As a beautiful place to visit, this area of Surrey is heavily populated. Increasing pressure by increased numbers of visitors on protected sites and disturbance on the species which live here can become damaging. Trampling of orchid-rich grasslands, repetitive disturbance to Great crested newt breeding ponds, and spread of disease (such as box blight) are examples. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.
Pagham Harbour Pagham Harbour is located South East of Chichester between Selsey and Bognor Regis and comprises an extensive central area of saltmarsh and tidal mudflats, with surrounding habitats including lagoons, shingle, open water, reed swamp and wet permanent grassland. All are supporting habitats for the breeding SPA bird species common tern and little tern and over-wintering brent goose and ruff. Species identified for possible future consideration include and Pintail and Black-tailed godwit. Most of the site is currently managed as RSPB local nature reserve.				

Pagham Harbour SPA	629.01	**Qualifying species:** • A193 Common tern; *Sterna hirundo* - (breeding) • A675 Dark-bellied Brent goose; *Branta bernicla bernicla* (non-breeding) • A195 Little tern; *Sterna albifrons* (breeding) • A151 Ruff; *Philomachus pugnax* (non-breeding)	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.	**Physical modification** Church Norton shingle Spit is accreting from the west, towards Pagham beach. In recent years there has been a pulse of sediment that has led to an extension of the spit which is also causing changes to the location and size of the harbour mouth and has led to risk of coastal erosion. Changes to the shingle spit may also lead to a natural closure of the channel, leading to changes in the wetland areas behind the spits. This could affect the breeding, roosting and feeding habitats of many of the bird species currently using the intertidal areas. It is not clear if, to what extent, or how quickly this would happen. The issue is the subject of ongoing discussion with the EA and others in terms of flood risk and coastal erosion issues. **Public access and disturbance** This site has open access over the shingle beach areas, which includes along with other species, Little tern nesting sites and Brent geese feeding and roosting areas. The public footpath and open access areas are regularly used by walkers, bird watchers, dog walkers, anglers and kite

				surfers. The tern nesting area is fenced off during breeding season but many birds are disturbed by dogs being walked off leads. At Sidlesham Quay people are able to launch into the harbour at high tide from outside the LNR, as well as during low tide from within the LNR, this causes trampling of the saltmarsh and other habitats. The bylaws and best practice protocols are not always adhered to or (in the case of the byelaws) enforced due to its size, use and the available number of LNR staff. **Water Pollution** The Pagham Lagoon and Harbour both receive fresh water from agricultural land drainage through rife systems. Pagham lagoon in particular is vulnerable to freshwater ingress as it has limited saline input and also receives surface water via road drains, and other drains and overflows. The pollutants and nutrients possibly present in the surface runoff could threaten the water quality of the lagoon. It is thought that the surface water drainage system is somehow connected to the sewage system (through piecemeal development in Pagham) causing it to overflow back into the surface water. Any

				remedy based on the outcomes of an Surface Water Management Plan and infiltration study lead by West Sussex County Council (in partnership) will likely lead to a multi-agency approach with a possible outcome utilising "sustainable urban drainage systems" or similar. Given the potential closure of the harbour by the shingle spit (priority 1); water pollution could become an issue over the long term for the inner harbour. **Fisheries: Commercial marine and estuarine** Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs require assessment and (where appropriate) management. This assessment will be undertaken by Sussex IFCA. For activities categorised as 'green', these assessments should take account of any in combination effects of amber activities, and/or appropriate plans or projects, in the site. Set netting, hand gathering of shellfish, and bait digging are the main activities occurring in the site.

				Fisheries: Recreational marine and estuarine Bait digging and angling occur within the harbour. They were previously managed through a West Sussex County Council permitting scheme, which limited how much the activity could occur within the site, but this is no longer the case. There is therefore currently no mechanism to restrict this activity in a relatively 'pristine' site. **Change in land management** Some areas of land under agricultural use within the wet grassland are currently outside the management control of the RSPB or an environmental scheme (i.e. they are not within Environmental Stewardship or other formal management). NE is looking to target landowners to get the land into appropriate management either through the RSPB scheme or separately.
Pagham Harbour Ramsar		**Ramsar criterion 6**: Qualifying Species/populations (as identified at designation)- species with peak counts in winter:		**Similar to SPA site (above)**

		• Dark-bellied brent goose; *Branta bernicla bernicla*, 2512 individuals (5 year peak mean 1998/9-2002/3) Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter: • Black-tailed godwit; *Limosa limosa islandica*, 377 individuals, (5 year peak mean 1998/9-2002/3)		
Rook Clift Rook Clift is a small wooded combe on the scarp slope of the South Downs. The soils are predominantly calcareous in nature, overlying the chalk of the Downs. Deeper soils occur at the foot of the slope, and also the course of a stream, arising within the wood. This site is 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. Despite this, the vegetation is otherwise typical of the habitat type, with an abundance of ferns such as hart's-tongue *Phyllitis scolopendrium* and shield-fern *Polystichum* spp.				
Rook Clift SAC	10.62	**Qualifying habitats:** – H9180. *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes	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;	**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

			– 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	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.
Singleton And Cocking Tunnels Singleton and Cocking Tunnels are two disused brick railway tunnels located in rural Sussex, just over 2 miles south of Midhurst. They once formed part of the Chichester to Midhurst railway line. The majority of the tunnels lie within the South Downs National Character Area (NCA 125) but the northern entrance of Cocking tunnel is within the Wealden Greensand National Character Area (NCA 120). The disused tunnels are one of the most important sites for hibernating bats in south-east England. In total eight species have occurred in the tunnels: In addition to barbastelle *Barbastella barbastellus* and Bechstein's bat *Myotis bechsteinii* the most regular species are Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentoni*, Brown longeared bat *Plecotus auritus* and Brandt's *Myotis brandti* and Whiskered bats *Myotis mystacinus*.				
Singleton and Cocking Tunnels SAC	2.45	**Qualifying species:** • S1308 Barbastelle bat *Barbastella barbastellus* • S1323 Bechstein's bat *Myotis bechsteinii*	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;	**Habitat connectivity** The protected site is limited to the tunnels themselves and does not include the surrounding area which is used for commuting in and out of the tunnels, for foraging during periods of semi hibernation and for swarming in the autumn (directly

			– 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.	outside the tunnel). More information on bat movements in the surrounding countryside could be used to better protect the integrity of the site. Additionally, disused railway tunnels to the north and south of the site have significant numbers of bats within them and probably form part of the suite of hibernacula used by bats in the area. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Habitat fragmentation** Land management in the surrounding countryside, eg through the destruction or inappropriate management of hedgerows and woodland, is likely to have an impact on the commuting routes the bats use in and out of the site. **Public access and disturbance** In the last ten years, there has been repeated suggestions that the tunnels should be reopened as a cycle route. This would be expected to cause disturbance to

				the bats. It is known that light pollution has an impact on both *myotis* species, ie Bechstein's and Horseshoe bats. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat movements/roosting availability in and around the SAC areas. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation. The local effect on the Bechstein's bats hibernating in the tunnel is likely to be low

Thames Valley Basin Heaths

Covering approximately 8,274 hectares and spanning 11 local authority areas, Thames Basin Heaths SPA forms part of an extensive complex of lowland heathlands in southern England that support important breeding bird populations. It is located across the counties of Surrey, Hampshire and Berkshire and within the Thames Basin Heaths National Character Area (NCA) which stretches westwards from Weybridge in Surrey to the countryside around Newbury in Berkshire. The SPA consists of areas of agriculturally-unimproved heathland, scrub and woodland which were once almost continuous but are now fragmented by roads, urban development and farmland. It supports important breeding populations of a number of birds which are strongly associated with heathland habitat, especially the ground nesting birds Nightjar and Woodlark, and also the Dartford

Warbler which often nests close to the ground amongst dense heather and gorse. Page 3 of 21 The geology of the area consists of sand and gravel sediments which give rise to sandy or peaty acidic soils. These support dry heath vegetation in well-draining areas and wet heath vegetation in low-lying shallow slopes and bogs.				
Thames Basin Heaths SPA	8274.72	**Qualifying species**: • A224 European nightjar; *Caprimulgus europaeus;* (Breeding) • A246 Woodlark; *Lullula arborea* (Breeding) • A302 Dartford warbler; *Sylvia undata* (Breeding)	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.	**Public access and disturbance** Parts of Thames Basin Heaths (and Thursley, Hankley & Frensham Commons SPA) are subject to high levels of recreational use and dog walkers make up a large proportion of visitors. This is likely to be affecting the distribution and overall numbers of ground-nesting Annex 1 birds (and breeding success). An 'avoidance strategy' is in place to help manage this pressure, including the provision of Suitable Accessible Natural Green Space (SANGS). However, recreational pressure may be hampering the potential for the sites to achieve their full contribution to sustainable national populations. Further work is desirable to determine the scale of impact from recreational disturbance. There is also concern at the growing use of parts of the complex by commercial dog walkers and desire to control this. Improved habitat management to increase suitability for Annex 1 birds and better coordination of habitat provision across the

				complex is also needed to better offset the effects of disturbance. **Undergrazing** Parts of the complex are undermanaged. Limitations are such that traditional stock cannot be used (because they are live firing ranges), or resistance to the fencing of common land. The excessive cost of disposal of arisings from cutting management is a significant factor making it impractical for large scale use. Controlled burning is not considered a practical alternative in this complex. Lack of grazing over a long period has resulted in poor habitat quality and restoration will take a long time. Grazing may actually be having negative impacts in some cases and improved management is required in these instances. There is scope to improve efficiency in use of resources through improved coordination, sharing of equipment and improved partnership working. **Forestry and woodland management** Large parts of Thames Basin Heaths are occupied by commercial forestry plantations where the maintenance of

				suitable conditions for Annex 1 birds is dependent upon rotational felling. However, there is no coordination or overall management plan and felling is dependent upon market forces. Climate change is also causing change in thinking amongst managers with introduction of broadleaves being considered and change from rotational to continuous cover management. **Hydrological changes** Part of Thursley, Ash Pirbright & Chobham SAC (Elstead Common) has evidence of damaging impacts due to drainage. Drains are also present on Thursley and Ockley Commons but it is not clear whether these are having adverse impacts - more research is needed here. This is becoming more urgent in the face of changing weather patterns and prolonged droughts but it is not clear at present what intervention, if any, should be put in place. **Inappropriate scrub control** Ineffective or lack of scrub control affects some areas of dry and wet heath, especially at Colony Bog, Bourley and Long Valley. The absence of scrub

				management plans at most sites is of concern as it is often viewed as a negative aspect with little consideration given for its value to Annex 1 birds. There is also concern that scrub management is a constant, significant drain on resources - there is a need for investigation of options which give an economic return on scrub management. **Invasive species** Rhododendron and Gaultheria control is on-going in parts but difficult to control where access for management is constrained. It is unclear what the scale of threat is posed by piri-pri bur to open heathland but monitoring of its spread is desirable. Possibly more of a threat to dry heath than wet. **Wildfire/arson** Uncontrolled fires are very damaging as they can have profound impacts on reptile populations, inverts and plant diversity and can result in significant habitat loss for annex 1 birds. They can affect forestry areas as well as open heath. Damaging impacts can last for many years for example by the wholesale removal of all

				gorse from a site. Strategies are in place in parts of the complex to reduce risk but more attention is needed to properly address this issue. Increasing threat of extensive fires is of great concern to the fire services and there is a desire for greater link up between efforts to protect property and roads from fire, and habitat management. **Air Pollution: impact of atmospheric nitrogen deposition** 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; spread of *Molinia* into wet and dry heath also appears to be promoted by high nitrate levels. This is most likely to be a current issue at Chobham Common but may represent a chronic adverse impact over the complex as a whole. **Feature location/ extent/ condition unknown** There are significant gaps in the

				knowledge of key aspects such as where woodlarks are overwintering and whether these sites are in need of protection, and coverage of the complex in terms of monitoring of Annex 1 birds is not comprehensive so recorded bird numbers are not representative of total numbers. Also, current monitoring does not provide information on breeding success, only territory numbers
The Mens The Mens is one of the largest ancient woodlands in West Sussex and supports a significant population of barbastelle Barbastella barbastellus. It is eight miles south-west of Horsham and falls within the Low Weald National Character Area (NCA 121). Most of the woodland lies on Weald Clay although in some places Paludina limestone outcrops at the surface. It is a varied site with a range of woodland communities and age structures which have developed due to differences in underlying soils and past management. The site also supports outstanding invertebrate, fungi, lichen and bryophyte assemblages. The woodland is predominantly high forest of sessile oak *Quercus petraea* and pedunculate oak *Quercus robur*, beech *Fagus sylvatica*, holly *Ilex aquifolium* and locally, ash *Fraxinus excelsior*, birches *Betula* spp. and wild service tree *Sorbus torminalis*. Beech dominates the lighter soils over an understorey of holly and yew *Taxus baccata*. On the heavier clay soils oak-ash woodland occurs over a mixed shrub layer which includes hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, crab apple *Malus sylvestris* and blackthorn *Prunus spinosa*. It is developing a near-natural high forest structure, in response to only limited silvicultural intervention over the 20th century, combined with the effects of natural events such as the 1987 great storm. Barbastelles roost within the woodland but tend to forage outside of the site, commuting along woodland corridors into the wider countryside.				
The Mens SAC	203.28	**Qualifying habitats** • H9120. Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation	**Forestry and woodland management** A small area of the site was clear felled without consent in the last ten years and needs restoring to woodland. Woodland management for SSSI features

		shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*); Beech forests on acid soils **Qualifying species** • S1308 Barbastelle bat; *Barbastella barbastellus*	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.	(lichens, invertebrates) which require higher light levels may have a significant impact on the bat species. Additionally some management of the beech woodland is necessary in places. More information about potential impacts on bat species is required. **Habitat connectivity** The protected site is limited to a woodland core area where breeding colonies are known to exist. The bats, however, rely on commuting and foraging habitat outside of the site and this needs to be better understood, protected and appropriately managed. It would also be useful to understand how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. Ebernoe Common and The Mens are similar SACs which lie within 5km of each other. It is likely that the bat populations of both sites are genetically linked. Barbastelle bats are known to commute more than 5km and there is continuous woodland cover between the sites to allow Bechstein's to travel. There is a case to

				investigate whether the two sites should be treated within one overarching N2K site. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Invasive species** Rhododendron is invading the south eastern edges of the site and surrounds the edges of the site on the northern side. **Change in land management** Land management in the surrounding countryside will have an impact on foraging areas for Barbastelle bats but at present the forage requirements, i.e. how much habitat and of what type, are poorly understood. Ultimately, inadequate foraging will impact on breeding success within the site. Further investigation of foraging and bat commuting route requirements of notified bat species is required, informing better management of mature hedgerows which need to be

				restored and maintained in the area around the site. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation. **Public access and disturbance** It is known that light pollution has an impact on bat species. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat movements/roosting availability in and around the SAC areas.
Thursley The Thursley, Hankley and Frensham Commons SPA forms a large complex of lowland heaths situated in Surrey close to the Hampshire border extensive areas of wet and dry heath, acid mire and bog pools. The complex is set in a largely rural setting with an unspoilt character despite its close proximity to large population centres such as London and Guildford. The surrounding landscape includes oak woodlands, conifer woods and small pastures intersected by narrow, sunken lanes. The complex is situated in the Surrey Hills Area of Outstanding Natural Beauty (AONB) and is part of the Weald National Character Area. The site supports assemblages of rare wetland invertebrate species, including				

notable numbers of breeding dragonflies. A significant number of non-wetland British Red Data Book invertebrates also occur on Thursley and Ockley Bogs. All six native reptile species and nationally important breeding populations of European nightjar and woodlark are also present on site.				
Thursley and Ockley Bogs Ramsar	265.24	**Ramsar criterion 2** Supports a community of rare wetland invertebrate species including notable numbers of breeding dragonflies. **Ramsar criterion 3** It is one of few sites in Britain to support all six native reptile species. The site also supports nationally important breeding populations of European nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea.*	N/A	N/A
Thursley, Ash, Pirbright and Chobam SAC	5138	**Qualifying Habitats**: • H4010 Northern Atlantic wet heaths with *Erica tetralix* • H4030 European dry heaths • H7150 Depressions on peat substrates of the *Rhynchosporion*	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	**Public access and disturbance** Parts of Thames Basin Heaths (and Thursley, Hankley & Frensham Commons SPA) are subject to high levels of recreational use and dog walkers make up a large proportion of visitors. This is likely to be affecting the distribution and overall numbers of ground-nesting Annex 1 birds (and breeding success). An 'avoidance strategy' is in place to help manage this pressure, including the provision of Suitable Accessible Natural Green Space

			– The supporting processes on which qualifying natural habitats rely	(SANGS). However, recreational pressure may be hampering the potential for the sites to achieve their full contribution to sustainable national populations. Further work is desirable to determine the scale of impact from recreational disturbance. There is also concern at the growing use of parts of the complex by commercial dog walkers and desire to control this. Improved habitat management to increase suitability for Annex 1 birds and better coordination of habitat provision across the complex is also needed to better offset the effects of disturbance. **Undergrazing** Parts of the complex are undermanaged. Limitations are such that traditional stock cannot be used (because they are live firing ranges), or resistance to the fencing of common land. The excessive cost of disposal of arisings from cutting management is a significant factor making it impractical for large scale use. Controlled burning is not considered a practical alternative in this complex. Lack of grazing over a long period has resulted in poor habitat quality and restoration will take a long time. Grazing may actually be having

				negative impacts in some cases and improved management is required in these instances. There is scope to improve efficiency in use of resources through improved coordination, sharing of equipment and improved partnership working. **Forestry and woodland management** Large parts of Thames Basin Heaths are occupied by commercial forestry plantations where the maintenance of suitable conditions for Annex 1 birds is dependent upon rotational felling. However, there is no coordination or overall management plan and felling is dependent upon market forces. Climate change is also causing change in thinking amongst managers with introduction of broadleaves being considered and change from rotational to continuous cover management. **Hydrological changes** Part of Thursley, Ash Pirbright & Chobham SAC (Elstead Common) has evidence of damaging impacts due to drainage. Drains are also present on Thursley and Ockley Commons but it is not clear whether these

				are having adverse impacts - more research is needed here. This is becoming more urgent in the face of changing weather patterns and prolonged droughts but it is not clear at present what intervention, if any, should be put in place. **Inappropriate scrub control** Ineffective or lack of scrub control affects some areas of dry and wet heath, especially at Colony Bog, Bourley and Long Valley. The absence of scrub management plans at most sites is of concern as it is often viewed as a negative aspect with little consideration given for its value to Annex 1 birds. There is also concern that scrub management is a constant, significant drain on resources - there is a need for investigation of options which give an economic return on scrub management. **Invasive species** Rhododendron and Gaultheria control is on-going in parts but difficult to control where access for management is constrained. It is unclear what the scale of threat is posed by piri-pri bur to open heathland but monitoring of its spread is

				desirable. Possibly more of a threat to dry heath than wet. **Wildfire/arson** Uncontrolled fires are very damaging as they can have profound impacts on reptile populations, inverts and plant diversity and can result in significant habitat loss for annex 1 birds. They can affect forestry areas as well as open heath. Damaging impacts can last for many years for example by the wholesale removal of all gorse from a site. Strategies are in place in parts of the complex to reduce risk but more attention is needed to properly address this issue. Increasing threat of extensive fires is of great concern to the fire services and there is a desire for greater link up between efforts to protect property and roads from fire, and habitat management. **Air Pollution: impact of atmospheric nitrogen deposition** 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; spread of *Molinia* into wet and dry heath also appears to be promoted by high nitrate levels. This is most likely to be a current issue at Chobham Common but may represent a chronic adverse impact over the complex as a whole. **Feature location/ extent/ condition unknown** There are significant gaps in the knowledge of key aspects such as where woodlarks are overwintering and whether these sites are in need of protection, and coverage of the complex in terms of monitoring of Annex 1 birds is not comprehensive so recorded bird numbers are not representative of total numbers. Also, current monitoring does not provide information on breeding success, only territory numbers
Thursley, Hankley and Frensham Commons SPA	1879.83	**Qualifying Species** • A224 European nightjar; *Caprimulgus europaeus* (Breeding) • A246 Woodlark; *Lullula arborea* (Breeding)	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;	Similar to SAC (above)

		• A302 Dartford warbler; *Sylvia undata* (Breeding)	– 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.	
Wealden Heaths Phase 2 The Wealden Heaths Phase II SPA is situated on an arc of hilly country on the edge of the Weald. The area runs parallel to the South Downs and is located on the borders of Hampshire, Surrey and West Sussex. 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 poorly drained 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. The Wealden Heaths SPA is situated in the Wealden Greensand National Character Area (NCA). Large parts of the SPA are used for military training, including live-firing, and so public access is restricted. However, there are also areas in the SPA which are very popular destinations for a variety of recreational uses including walking, birdwatching, orienteering and cycling. The site also encompasses Woolmer Forest SAC.				
Wealden Heaths Phase 2 SPA	2053.83	**Qualifying Species**	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to	**Change in land management** Parts of the complex have suffered from management neglect in the past and there

		• A224 European nightjar; *Caprimulgus europaeus* (Breeding) • A246 Woodlark; *Lullula arborea* (Breeding) • A302 Dartford warbler; *Sylvia undata* (Breeding)	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.	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 the neighbouring 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. **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 and 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. **Air Pollution: impact of atmospheric nitrogen deposition** 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. **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.

Woolmer Forest 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. Woolmer Forest SAC is included within the South Downs National Character Area (NCA Profile 125) South Downs National Park, and is a significant component within a wider complex of fragmented heaths, broadly centred on the converging boundaries of Hampshire, West Sussex and Surrey. Woolmer Forest SAC is of exceptional nature conservation importance. It represents one of the largest surviving tracts of lowland heathland in south-east England and it provides supporting habitat for a large number of locally and nationally important species. The site is unique in the UK in supporting natural populations of all 12 British amphibians and reptiles. All of the SAC is also classified as part of the Wealden Heaths Special Protection Area (SPA). The entire site is owned by the Ministry of Defence and used for military training, primarily as live-firing ranges. Necessary safety considerations have implications for the management of the site.				
Woolmer Forest SAC	666.68	**Qualifying habitats** • 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	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	**Change 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 the neighbouring 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. **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 and 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. **Air Pollution: impact of atmospheric nitrogen deposition** 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. **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.

Appendix 4. Habitats Sites within 20km of the Horsham Districts Boundary

Appendix 5. Allocation sites within the ZOI of the indicated Habitats sites
Appendix 6. Employment sites within the ZOI of the indicated Habitats Sites

including web links to further information.

The list of key vulnerabilities / factors affecting site integrity can be found in **Error! Reference source not found.Error! Reference source not found.**, including links to further information.

A distance of 20km from the Horsham District boundary was used to identify Habitats Sites likely to be affected by impacts relating to Horsham Local Plan. This distance was considered an initial scoping distance, however, the appropriate area or distance of any Zone of Influence (ZOI) to be defined should be based on a site-by-site analysis, in light of all available evidence. Therefore, Habitats sites will be scoped in even if they are situated outside of the 20km if evidence is not available and a precautionary approach is advised. There are 20 Habitat Sites which lie within 20 km of the Horsham Districts authorities. However, the Impact Risk Zones (IRZs) can be interrogated on MAGIC and these show which elements may have an effect. ZOIs are therefore evidenced by surveys to inform IRZs. The IRZs are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to Habitats Sites. Those sites not identified as being within any IRZ have been scoped out for any further assessment, unless an impact pathway can be determined which may cause possible impacts to a Habitat Site. The sites scoped in and out are shown in Table 2. Habitats Sites within 20 km of Horsham District.

Table 2. Habitats Sites within 20 km of Horsham District

Site	Location	Scoped in or out
Arun Valley Ramsar, SAC and SPA	In West Sussex just north of the South Downs escarpment	**Scoped in** All three Habitat sites falls partly within Horsham. Within the IRZ as identified on MAGIC.
Ashdown Forest SAC	North east of Horsham District in East Sussex, near the border with West Sussex	**Scoped in** In consideration of the Wealden judgement, this Habitats site has been scoped in as a precautionary approach.
Ashdown Forest SPA	North east of Horsham District in East Sussex, near the border with West Sussex	**Scoped out** Outside of the IRZ as identified on MAGIC
Castle Hill SAC	South of East Sussex, straddling the border with Brighton Borough	**Scoped out** Outside of the IRZ as identified on MAGIC
Chichester and Langstone Harbours Ramsar and SPA	On the south-western coast of West Sussex	**Scoped out** Outside of the IRZ as identified on MAGIC
Duncton to Bignor Escarpment SAC	In Chichester District, to the south west of Horsham	**Scoped out** This IRZ of the Habitats site falls partly within Horsham District Boundary as identified on MAGIC. However, there is currently no

Site	Location	Scoped in or out
Ebernoe Common SAC	In Chichester District, to the west of Horsham, five miles south-east of Haslemere	**Scoped in** Outside of the ZOI as identified on MAGIC but within Wider conservation area for Sussex Bat SAC Protocol.
Kingley Vale SAC	In west Chichester District, within both the South Downs National Character Area and National Park	**Scoped out** Outside of the IRZ as identified on MAGIC
Lewes Down SAC	South east of Horsham in Lewes District	**Scoped out** Outside of the IRZ as identified on MAGIC
Mole Gap to Reigate Escarpment SAC	In the North Downs in Surrey	**Scoped out** Outside of the IRZ as identified on MAGIC
Pagham Harbour Ramsar and SPA	On the south-eastern coast of Chichester, between Selsey and Bognor Regis	**Scoped out** Outside of the IRZ as identified on MAGIC
Rook Clift SAC	Within the South Downs, in eastern Chichester District	**Scoped out** Outside of the IRZ as identified on MAGIC
Singleton and Cocking Tunnels SAC	Within the South Downs, in eastern Chichester District	**Scoped out** Outside of the IRZ as identified on MAGIC
The Mens SAC	In Chichester District, approximately 1km west of the Horsham District border	**Scoped in** Horsham District is within the IRZ for this Habitat site as identified on MAGIC.
Thursley Ramsar, SAC and SPA	In south western Surrey	**Scoped out** Outside of the IRZ as identified on MAGIC
Wealden Heaths Phase II SPA	In East Hampshire	**Scoped out** Outside of the IRZ as identified on MAGIC

Site	Location	Scoped in or out
Woolmer Forest SAC	In East Hampshire	**Scoped out** Outside of the IRZ as identified on MAGIC

A map of all 20 Habitats sites with the 20 km radius of Horsham Districts can be found in Appendix 4.

2.3 Screening and Impact Pathways

During the Screening stage each policy has been screened for Likely Significant Effects. An Appropriate Assessment will be undertaken ahead of Regulation 19 (proposed submission) stage, for policies where it is not possible to rule out Likely Significant Effects.

There are a wide range of potential impacts and the following impacts summarised below, were considered most likely to cause a Likely Significant Effects:

- Loss of functionally linked land (land outside the SPA and Ramsar site). Impact on site features (species) which travel outside the protected sites may be relevant where development could result in effects on qualifying interest species within the Habitats Sites, for example through the loss of feeding grounds for an identified species.
- Increase of any type of *disturbance*, for example from *recreational use* resulting from new housing development and / or improved access due to transport infrastructure projects;
- Changes in *water quality* as a result of new development and greater pressure on water treatment services,
- Changes in *water quantity* as a result of increased surface runoff or increased groundwater extraction;
- Changes in *atmospheric pollution levels* due to increased traffic, waste management facilities etc. Pollution discharges from developments such as industrial developments, quarries and waste management facilities.

The ZOIs which are provided on the MAGIC website www.magic.gov.uk have been used as a starting point in determining Likely Significant Effect on Habitats Sites and spatial data has been used to determine the proximity of potential development locations to the Habitats Sites. There are many uncertainties associated with using trigger distances as there are very few standards available as a guide to how far impacts will travel. Therefore, during the screening stage a number of assumptions based on professional judgement have been applied in relation to assessing the Likely Significant Effects on Habitats Sites that may result from the Local Plan, as described below.

2.3.1 Loss of Functionally Linked Land (Land outside of a SPA and Ramsar Site)

Loss of land may have the potential to result in Likely Significant Effects to Habitats Sites where the habitat affected contributes towards maintaining the interest feature for which the Habitats Sites is designated.

Mobile interest features listed in the relevant Habitats sites e.g. bats use hedgerows for foraging and commuting and woodlands for roosting; birds may use off-site habitat (i.e. land outside of the SPA and Ramsar site boundary) for feeding, roosting, foraging and loafing, especially large fields comprising arable and pastoral land uses and coastal habitats. Natural England has advised that their recognised foraging distance threshold for the majority of wetland bird species is 2km from a designated site although; based upon published data, Natural England recommends impact

risk zones for the Sussex bat SACs as 6.5km (Key conservation area – all direct and indirect impacts assessed) and 12km (Wider conservation area – significant impacts or severance to bat flight lines to be considered).

Barbastelle and Bechstein's bats, which favour ancient woodland, breed in the site because it provides suitable roosting and feeding habitats. While Bechstein's feed exclusively in the woodland, Barbastelles commute into the surrounding countryside using the woodland corridors which branch out from the site. In addition, the native trees, particularly those with old growth characteristics, support rich lichen and fungal communities, including a number of rare and scarce species, and the woodland complex as a whole supports a diverse breeding bird assemblage. The Mens is one of the largest ancient woodlands in West Sussex and supports a significant maternity colony of Barbastelle bats which roost within the woodland but tend to forage outside of the site, commuting along woodland corridors into the wider countryside.

The Site Improvement Plans (SIP) for The Mens SAC and Ebernoe Common SAC (both Natural England, 2015) include a recommendation to address issues impacting or threatening the condition of this Habitats site:
"Further investigation of foraging and bat commuting route requirements of notified bat species in and outside of the site. Further understanding of these requirements will ultimately help deliver better management of foraging and commuting habitat in the surrounding landscape."

Further to this issue, the Site Conservation Objectives: Supplementary advice on conserving and restoring site features for The Mens SAC (Natural England (Feb 2019)) states that:

"Barbastelle bats may forage up to 5km from their maternity roosts, though some individuals in less favourable habitat may forage further to reach suitable feeding grounds (Greenaway, 2001). Generally, Barbastelle bats forage within woodland canopy and margins, though will feed in more open areas i.e. orchards, suburban parks. Commutes along linear landscape features such as woodland edge, hedgerows etc, though will cross extensive open areas (i.e. arable fields) to reach foraging grounds and may feed to a certain extent within these more open areas. Typical flight lines used by these species include linear hedgerows, waterways, blocks of scrub, wooded rides and tracks. Flight lines will extend beyond the designated site boundary into the wider local landscape

Key foraging areas and commuting routes have been identified by radio-tracking and unbroken dense strips of mature woodland with a shaded central track or ride (along which bats can fly) provide ideal flight lines."

In addition to the SACs containing their roosting sites, the bats also require access to habitats outside the boundary of the SACs. This habitat is integral to supporting bats associated with the SACs and is often referred to as functionally-linked habitat. Such functionally linked habitat includes the following:

- Flight lines – these are key commuting routes from roosts to foraging (or feeding) areas used by the bats. The barbastelle flight lines around Ebernoe Common and The Mens have been investigated through survey and are shown in Map 1. The routes to Singleton and Cocking Tunnels are less well known.
- Foraging areas – these are the areas of land where bats feed. Barbastelle bats can forage 10-15 kilometres from the roosting sites and they prefer wet meadows and riparian habitats. Bechstein's tend to forage in and around the woodland where they roost with limited outward travel.

As identified in the Draft landscape scale protocol for planning and enhancement of Sussex Bat SAC[3], potential physical changes from development include removal of trees, hedgerows and woodland caused by development on foraging or commuting routes, alteration of conditions to roosts or nearby and changes to management of habitats. These changes result in impacts such as loss, change, modification or isolation of bats and their roosts, commuting corridors, feeding areas and potentially killing and injury of bats.

[3] https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf

The impacts of increased lighting levels both during construction and operation / occupation can also result in considerable impacts on bats outside the bat SAC boundaries. These include bats emerging later or not at all, which leads to reduced feeding opportunities, roost abandonment and reduction in use of foraging areas and ability to use commuting routes to/from their roosts.

It is therefore important for any development proposed within Pulborough Neighbourhood Plan to avoid severance of hedgerows and lighting impacts by

- Re-designing the scheme (or elements of the scheme) to ensure habitats and features used by bats are not directly or indirectly impacted
- Designing the lighting so that the light levels for all roosts, feeding and commuting habitats during construction and operational phases does not increase above pre-development/impact levels.

Loss of functionally linked land is therefore within scope of the HRA screening.

2.3.2 Water Quality

An important determinant of the nature of wetland Habitats sites and the species that they support is the quality of the water that feeds them. Poor water quality can have a range of environmental impacts.

High levels of toxic chemicals and metals can result in immediate death of aquatic life and have detrimental effects even at lower levels, including changes in wildlife behaviour and increased vulnerability to disease. Any discharge from construction sites could therefore result in a Likely Significant Effect although precautionary measures e.g. a management plan for construction or discharge consents from Environment Agency are likely to be considered as appropriate mitigation.

Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. In the marine environment, nitrogen is the limiting plant nutrient, so eutrophication is often associated with discharges containing available nitrogen. Algal blooms, which commonly occur due to eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, increasing the oxygen-depleting effects of eutrophication.

Sewage and industrial effluent discharges contribute to increased nutrients levels in Habitats Sites, particularly to phosphate levels in watercourses leading into them. Some components of sewage effluent, pesticides, and industrial chemicals, are suspected to interfere with hormones, possibly having negative effects on the reproduction and development of aquatic life. Diffuse pollution, including that from urban run-off, is considered to be a major factor in the unfavourable condition of some Habitats sites. Tidal mudflats, on which many SPA bird species depend, are vulnerable to smothering by increased macroalgal growth due to treated effluent discharge and scouring by increased flow volumes.

Greater pressure on water treatment services due to new development, especially housing, may therefore increase the risk of effluent entering into aquatic environments.

Consequently, Water quality potential impacts are within scope of this HRA screening. A map showing the proximity of main rivers to Habitat Sites and the Local Plan's housing allocations can be found in Appendix 4. Due to the very nature of watercourses, hydrological connectivity can continue for considerable distances.

This stage of the HRA has assumed that the potential for Likely Significant Effects due to reduced water quality, either alone or in-combination, only exists for Habitats Sites which are hydrologically connected and have been scoped in

with Table 2. Habitats Sites within 20 km of Horsham District. Any water pollution which may be caused from more distant development was assumed to be sufficiently diluted and dispersed as to cause a negligible impact.

Water pollution, such as contaminated surface run-off, is assumed incapable of significant effects on Habitats Sites beyond the District boundary, and therefore could only affect the Arun Valley. All housing allocations sites situated within the 2km ZOI of Arun Valley SAC, SPA & Ramsar must also be considered for impacts of water quality.

Water Pollution is therefore within scope of the HRA screening.

2.3.3 Water Quantity

Surface Water Flooding

Development on green field locations can create impermeable surfaces which can increase surface drainage rates. This can cause changes in depth, duration, frequency, magnitude and timing of water supply or flow, which can have significant implications for some waterbirds in sensitive habitats. Such changes may affect the quality and suitability of habitats used by birds for drinking, preening, feeding or roosting.

All housing allocations underpinned within Policy 14, within the 2km ZOI for high levels water discharge for the for the Arun Valley SAC, SPA and Ramsar will need to be screened in, to be considered at Appropriate Assessment. This is highlighted in Magic.defra.gov.uk and includes consideration of any discharge of water or liquid waste of more than 2m³/day to ground (i.e. to seep away).

Reduced Water Resources

Housing growth is likely to increase regional water abstraction rates, which can have serious negative impacts on Habitats sites. This is because over-abstraction can reduce water levels in rivers, causing reduced flow velocity. This can have wide ranging effects on river and wetland habitat parameters, including increased temperatures and nutrient concentrations and reduced oxygen concentrations. Such impacts can be significantly detrimental to rivers' floristic characteristics and to notable species.

Increased use of water sources by a Local Plan also has the potential to affect terrestrial habitats. Excessive abstraction from underlying aquifers could cause a lowering of the water table and affect the water quality of sensitive wetland habitats.

The Water Resources Management Plan 2019, Annex 15: Habitats Regulations Assessment (Southern Water December 2019) indicates the following:

"The Arun Valley SAC, SPA and Ramsar is within the zone of influence of three drought management options (Pulborough and North Arundel Drought Permits/Orders and the Littlehampton emergency desalination plant) and three WRMP schemes: the Pulborough winter transfer scheme Stage 2 (and, if required, the Stage 1 option as an alternative option), Littlehampton WwTW indirect potable water reuse scheme and the Tidal River Arun Desalination (strategic alternative).

The Littlehampton WwTW indirect potable water reuse scheme and (if required) the Pulborough winter transfer scheme Stage 1 option and Tidal River Arun Desalination, will not be in operation until AMP8 (~2027) and therefore do not overlap operationally with the Drought Plan timeframe of 2019 to 2024. Consequently, there is no potential for cumulative operational effects; the potential for cumulative effects will be further reviewed as part of the next Drought Plan update in 2023. Construction of the Littlehampton reuse scheme and the Littlehampton emergency desalination option are mutually exclusive as they would need to use the same land area.

Construction of the Pulborough winter transfer scheme Stage 1 and Tidal River Arun Desalination (if required) are unlikely to overlap with the Drought Plan 2019 time period. There is no construction associated with the Pulborough winter transfer scheme Stage 2 option, but this would be operational during the lifetime of the Drought Plan 2019. Cumulative effects with the Pulborough Drought Permit/Order options are considered to be minor at greatest due to the limited interaction in drought conditions between the groundwater abstraction and the surface water abstraction under the Drought Permit/Order. No cumulative LSEs are therefore anticipated."

Therefore, Southern Water have ruled out LSEs from Reduced Water Resources on the Arun Valley SAC, SPA, Ramsar. Consequently, we have reviewed the Drought Plan 2019 and Water Resources Management Plan 2019 and we are satisfied that reduced water resources can be screened out from further assessment.

2.3.4 Air Quality

There are number of atmospheric pollutants which can result in direct or indirect impacts to Habitats sites. These impacts are usually caused when the qualifying features are plants, soils and wetland habitats. However, some species may also be indirectly impacted from air pollution causing changes in habitat composition. The primary contributor to atmospheric pollution is transport related activities. Therefore, the main pollutants to atmospheric pollution are considered to be oxides of nitrogen (NO_x) or sulphur dioxide (SO_2) from traffic emissions. However, high intensities of agricultural practices are also considered to have a significant impact to air pollution. Potential impacts from key air pollutants and their sources have been highlighted within
Table 3.

Table 3: Main sources and effects of air pollutants on Habitat Sites

Pollutants	Source	Effects on habitats and species
Acid Deposition	SO_2, NO_x and ammonia all contribute to acid deposition. Although future trends in sulphur emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased nitrogen emissions may cancel out any gains produced by reduced sulphur levels	Can affect habitats and species from acid rain, as well as, dry deposition. Some habitats will be more susceptible depending on soil type, geology, weathering rate and buffering capacity.
Ammonia (NH_3)	Ammonia is released following decomposition and volition of animal wastes. It is naturally occurring trace gas, but levels have increased considerably within increased agricultural practices. Ammonia reacts with acid pollutants such as the products of SO_2 and NO_x emissions to produce fine ammonium (NH_4) containing aerosol which may be transferred much longer distances (Can	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH_3 is rapidly deposited, some of the most acute problems of NH_3 are for small relict nature reserves located near to intensive agricultural landscapes.

Pollutants	Source	Effects on habitats and species
	therefore be a significant trans-boundary issue).	
Nitrogen oxides (NO_x)	Nitrogen oxides are mostly primarily produced in combustion processes, such as coal fire power stations.	Deposition of nitrogen compounds (Nitrates, nitrogen dioxide and nitrate acid), can lead to both soil and freshwater acidification. In addition, nitrogen compounds can cause eutrophication of soils and water. This alters the species composition of plant communities and can eliminate sensitive species.
Nitrogen deposition (N)	The pollutants that contribute to nitrogen deposition are derived mainly from NO_x and NH_3 emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow growing perennial species and bryophytes are most at risk from Nitrogen eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. N disposition can also increase the risk of damage from abiotic factors e.g. drought and frost.
Ozone (O_3)	A secondary pollutant generated by photochemical reactions from NO_x and volatile organic compounds. These are mainly released by the combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O_3 above 40 ppb can be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO_2	Main sources of Sulphur Dioxide emission are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric	Wet and dry depositions of Sulphur Dioxide acidify soils and freshwater which alters the species composition of plant and associated animal

Pollutants	Source	Effects on habitats and species
	concentrations in busy ports. Total sulphur dioxide emissions have decreased substantially in the UK since the 1980's.	communities. The significance of impacts depends on levels of deposition and the buffering capacity of soils.

Nitrogen deposition has been included as a key vulnerability/ factors affecting site integrity in the Site Improvement Plans for Ebernoe Common SAC and The Mens SAC. This is because Nitrogen deposition exceeds relevant critical loads for broadleaved deciduous woodland supporting habitat at these sites.

Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. As a result, this could in-directly impact the bat populations present within the Habitat Sites, including Barbastelle and Bechstein`s bat.

Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. It is important to distinguish between a critical load and a critical level. The critical load relates to the quantity of pollutant deposited from air to the ground, whereas the critical level is the gaseous concentration of a pollutant in the air.

Critical Loads are defined as: *" a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge"* (Source: https://www.icpmapping.org/Definitions_and_abbreviations).

Critical levels are defined as *"concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge".* (Source: https://www.icpmapping.org/Definitions_and_abbreviations).

In the Ebernoe Common SAC and The Mens SAC there are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. Therefore, impacts from these atmospheric pollutants should be considered as appropriate on a case-by-case basis. Ground level ozone is also regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development.

Therefore, Natural England has targeted to monitor and reduce nitrogen deposition below critical loads at both Habitat Sites. However, they have recognised that avoiding impacts from increased atmospheric pollutants may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. It is highlighted that increased nitrogen deposition, sulphur and ammonia are primarily associated with increased traffic, which could be increased by new roads or via increased vehicle usage of existing roads. The Design Manual for Roads and Bridges (DMRB) indicates that the effect of traffic emissions can be significant within 200 metres of a Habitats Site and that anything beyond 200 metres will have of no consequence against background levels, as indicated with Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (2018).

Although Ashdown Forest SAC lies 14.7km outside Horsham district and was screened out in previous HRA reports for Horsham DC (TEC, 2012 and eCountability, 2014), following the Court decisions including Wealden v SSCLG 2017, it is essential that air quality considerations have appropriate regard for any impacts that may act in-combination

in HRA work. Therefore, where there is any risk of air quality deterioration near a Habitats site sensitive to air pollution, an appropriate assessment of air quality should be undertaken with regard for the principles of this recent case. Although, it is important to note that the competent Authority is entitled to a degree of flexibility when undertaking an in-combination assessment and can exercise judgement over which other plans and project to take into account (Walton v EWCA 2832 2011). However, HRA Regulations require the competent authority to take a precautionary approach and, as there is no evidence to enable the LPA to rule out Likely Significant Effects from air pollution on Ashdown Forest SAC, this impact has been scoped in for further assessment within this HRA.

Air Quality has therefore been scoped in for the HRA screening.

2.3.5 Disturbance

Disturbance concerns species, rather than habitats e.g. wetland birds. It may be limited in time (noise, source of light *etc*.). The intensity, duration and frequency of repetition of disturbance are therefore important parameters. The following factors can be regarded as significant disturbance.

Any event, activity or process contributing to the:

- The long-term decline of the *population* of the species on the site.
- The reduction, or to the risk of reduction, of the *range* of the species within the site.
- The reduction of the size of the available *habitat* of the species.

Factors such as noise, light, dust and vibration, litter are capable of causing significant disturbances for species, particularly waterfowl populations.

Managing Natura 2000 Sites states that: “Disturbance of a species occurs on a site from events, activities or processes contributing, within the site, to a long-term decline in the population of the species, to a reduction or risk of reduction in its range, and to a reduction in its available habitat. This assessment is done according to the site’s conservation objectives and its contribution to the coherence of the network.”

The Supplementary Advice issued by Natural England on conserving and restoring site features in the Arun Valley SPA identifies that:
“The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures”. The Supplementary Advice summary can be found in the following location: http://publications.naturalengland.org.uk/publication/4924283725807616

Therefore, policies or housing applications which have the potential to cause increase disturbance at the Arun Valley SPA will have a Likely Significant Effect upon this Habitat Site and will need to be screened in for Appropriate Assessment.

In addition, there is potential for disturbance to the qualifying of features of the Ebernoe Common SAC and The Mens SAC. This could be undertaken via disturbance in or around their breeding sites and resting places or along important

foraging and commuting routes used to access key areas of their territory. This is highlighted in more comprehensive in the functionally linked land chapter (2.3.1) above.

2.4 Screening categorisation

Screening is set out in Chapter 3 of this report and Appendix 2considers each policy in the Local Plan and the results of the screening exercise recorded, using the precautionary principle. Each policy and land allocation included in the Local Plan has been categorised. A 'traffic light' system has been used to record the potential for policies and allocated sites to have a Likely Significant Effect, using the system of colours in Table 4below.

Table 4. Habitats Regulations Assessment Screening Categorisation

Category A : Significant effects not likely
Category A identifies those polices that would not result in a Likely Significant Effect and are considered to have no adverse effect. These policies can be 'screened out' and no further assessment is required. This is because, if there are no adverse effects at all, there can be no adverse effect to contribute to in combination effects of other plans or projects.
Category B : Significant effects uncertain
Category B identifies those polices which will have no significant adverse effect on the site. That is, there could be some effect but none which would undermine the conservation objectives, when the policy is considered on its own. Given that there may be some effect this now needs to be considered in combination with other plans or projects. If these effects can be excluded in combination, the policy can be screened out and no further assessment required. However, if the possibility of a significant adverse effect in combination cannot be ruled out there will be a Likely Significant Effect in combination, and Appropriate Assessment will be required.
Category C : Likely Significant Effect
Category C identifies those polices which cannot be ruled out as having a Likely Significant Effect upon a Habitat Site, alone, that is the effect could undermine the conservation objectives. In this case an Appropriate Assessment is triggered without needing to consider in combination effects at screening stage, although they may need to be considered at Appropriate Assessment.

2.5 Appropriate Assessment and the Integrity Test

Where the Local Plan for Horsham District may cause *Likely Significant Effects*, the second stage is to undertake an 'Appropriate Assessment' of the implications of the plan (either alone or in combination with other plans or projects) and establish whether there may be an *Adverse Effect on Integrity* (AEOI) of any Habitats Sites in view of their *Conservation Objectives*.

Some policies of the Local Plan can be used to mitigate some of the potential Likely Significant Effects which have been identified. These can be considered at Appropriate Assessment. This stage thus becomes an iterative process as avoidance and reduction measures can be incorporated in order to be able to ascertain that there is no *Adverse Effect on Integrity* on any Habitats Site, before making a final assessment.

The Appropriate Assessment should be undertaken by the competent authority and should assess all aspects of the Local Plan which can by themselves, or in combination with other plans and projects, affect the sites' Conservation Objectives. The assessment must consider the implications for each qualifying feature of each potentially affected Habitats Site. Key vulnerabilities are set out in Appendix 3 and the Site Improvement Plans were used to obtain this information. Site Improvement Plans have been developed for each Habitats Site in England as part of the 'Improvement Programme for England's Natura 2000 sites (IPENS)'.The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. These can be found at: http://publications.naturalengland.org.uk/category/5458594975711232.

In order to identify potential in combination effects other plans and projects which may affect the Habitats Sites need to be identified. The list of county and district level plans which provide for development in Horsham Districts as well as Nationally Strategic Infrastructure Projects (NSIPs) to be considered will be identified in liaison with the Sustainability Appraisal.

In accordance with the requirements of the Habitats Regulations, Natural England should be formally consulted on the Appropriate Assessment document.

3. Screening of Likely Significant Effects

3.1 Screening Policies for Likely Significant Effect

This chapter summarises the potential for Likely Significant Effects identified, based upon Chapter 2 and using Categories A, B and C above. It advises as to where Likely Significant Effects can be ruled out. The need for an 'Appropriate Assessment' is triggered where the HRA Screening stage identifies policies which may have a Likely Significant Effect on any Habitats Sites (see **Error! Reference source not found.**).

A number of impact pathways have been identified in Chapter 2 above and these have been screened in below. Six Habitats Sites have been scoped in for HRA screening. Where this is likely to result in a significant effect, or where there is uncertainty, in line with the precautionary approach being applied in the HRA, until significant effects can be ruled out, they are treated as giving rise to *Likely Significant Effects*.

Policies are screened out where they would not result in development because they either set out criteria relating to development proposed under other policies are very general in nature or they seek to protect the natural environment.

A summary of the assessment is set out in Appendix 2. Conclusions take into account the potential effects of other plans and projects. Each policy was considered in the context of the policy Screening criteria above.

The Habitats Sites whose ZOI falls partly within Horsham Local Plan have been scoped in and are listed below:

- The Arun Valley Ramsar, SPA and SAC
- The Mens SAC

An initial assessment has been undertaken to identify whether the Local Plan's policies has the potential to have any Likely Significant Effects on any Habitats Sites.

The table below
Table 5 lists the policies that have the potential to cause a *Likely Significant Effect*, *before taking mitigation into account* and therefore require Appropriate Assessment. All polices are shown in the Screening Table in Appendix 2.

Table 5. Policies that have the Potential to Cause a Likely Significant Effect and their Impact Pathways

Policy	Loss of Functionally Linked Land	Disturbance	Water Quality	Water Quantity	Air Pollution	Potential for In Combination Effects
Policy 7 - Employment Development	✓				✓	✓
Policy 9 - Conversion of Agricultural	✓	✓				✓

Policy	Loss of Functionally Linked Land	Disturbance	Water Quality	Water Quantity	Air Pollution	Potential for In Combination Effects
and Rural Buildings to Commercial, Community or Residential Uses						
Policy 14 - Housing Provision	✓	✓	✓	✓	✓	✓
Policy 22 - Replacement Dwellings and House Extensions in the Countryside	✓	✓				✓
Policy 24 - Gypsy and Traveller Accommodation	✓	✓	✓			✓
Policy 46 - Community Facilities, Leisure and Recreation	✓	✓				✓

3.2 Policies carried forward to Appropriate Assessment Stage

All polices are shown in the HRA Screening Table in Appendix 2 and those marked red or amber are screened in as having the potential for Likely Significant Effects, alone or in combination with other plans and projects, before taking mitigation into account and therefore require Appropriate Assessment.

3.3 Habitat Sites Screened in for Appropriate Assessment

The potential impact pathways between Habitats Sites and Local Plan polices, identified at HRA Screening stage,

are shown in Table 6 below.

Table 6. Habitats sites, Impact pathways and Examples of LSE Identified at Screening Stage

Nature of potential impact	How the Horsham Local Plan (alone or in combination with other plans and projects) could affect a Habitats site?	Likely to result in Significant Effect and therefore require further assessment?
Habitat loss / Land take by development	Allocations are all outside the boundaries of any Habitats sites	No
Impact on features (protected species) outside the protected site boundary	Construction of new development could have the potential to "result in likely significant effects upon the Barbastelle bats of The Mens SAC and Ebernoe Common SAC via direct habitat loss or disturbances from lighting, noise and vibrations both during construction and operational phases of development	Due to Functionally Linked Land with the Parish for designation features of Sussex Bat SAC (Barbastelle and Bechstein's bats, both Annex II of the Habitats Directive), without mitigation, there is potential for Likely Significant Effect. The need to embed mitigation is not possible at Stage 1 HRA Screening so Stage 2 Appropriate Assessment is triggered.
Recreational disturbance Other Disturbance	It is considered that although there is a pathway, it is not considered that any development is likely to result in any significant pollution impacts.	Pathway but unlikely to be significant

Nature of potential impact	How the Horsham Local Plan (alone or in combination with other plans and projects) could affect a Habitats site?	Likely to result in Significant Effect and therefore require further assessment?
Water quantity and quality (pollution)	There is a potential pathway for development at Pulborough to impact on the SPA & Ramsar sites within scope of the HRA as the Parish lies within the Zones of Influence.	Due to linkages to watercourses, without mitigation, it is not possible to screen out the potential for Likely Significant Effect on designation features of Arun Valley SPA, SAC & Ramsar sites from policy allocations in Horsham Local Plan. The need to embed mitigation is not possible at Stage 1 HRA Screening so Stage 2 Appropriate Assessment is triggered for some Policies in the Plan.
Changes in air & noise pollution levels	It is considered that there is a pathway in relation to developments within 200m of Arun Valley SAC. This will need to be considered if any development is likely to result in any significant pollution impacts. There is also a potential pathway in relation to air quality impacts from development on Ashdown Forest SAC in combination with other plans and projects.	No evidence to rule out Likely Significant Effect without mitigation which not possible at Stage 1 HRA Screening. Stage 2 Appropriate Assessment is therefore triggered.

Potential effects listed for the above Habitats Sites cannot be ruled out from being likely to be significant and the pathways require further consideration. The Table summarises the main ways in which the Local Plan could cause Likely Significant Effects. Some of the potential Likely Significant Effects could be mitigated through the implementation of other proposals in the Local Plan itself.

3.4 HRA Screening Conclusion and Considering the Next Stage

The range of potential impacts on Habitats Sites has been considered and assessed. In line with the recent Court judgment (*CJEU People Over Wind v Coillte Teoranta C-323/17*), mitigation measures can no longer be taken into account when carrying out a HRA screening assessment to decide whether a plan or project is likely to result in *Likely Significant Effects* on a Habitats Site. Consequently, HRA screening has concluded that it is not possible to rule out the potential for Likely Significant Effects without further assessment and possible mitigation for the indicated polices.

As it is not possible without mitigation to conclude no Likely Significant Effect on the Habitats site screened in for this HRA from the Horsham Local Plan *alone,* it is not necessary to consider potential impacts *in combination with other plans and projects* at this stage.

An Appropriate Assessment is therefore required under the UK Conservation of Habitats and Species Regulations 2017. The Horsham Local Plan may only be adopted after having ascertained that it will not result in adverse effect on integrity of the Habitats Sites within scope of this assessment.

This stage can be an iterative process as measures can be incorporated in order to be able to ascertain that there is no significant adverse effect on the integrity, before re-screening and making a final assessment.

4. Conclusion

This Habitat Regulation Assessment screening report considers the impacts arising from the Horsham District Local Plan.

The range of potential impacts on fourteen Habitats sites has been considered and assessed. In line with the recent Court judgment (*CJEU People Over Wind v Coillte Teoranta C-323/17*), mitigation measures can no longer be taken into account when carrying out a HRA screening assessment to decide whether a plan or project is likely to result in *Likely Significant Effects* on a Habitats Site. Consequently, HRA screening has concluded that it is not possible to rule out the potential for Likely Significant Effects without further assessment and possible mitigation for the polices set out in 3.2 and Table 7 above.

Stage 2 Appropriate Assessment is therefore required under the UK Conservation of Habitats and Species Regulations 2017. The Horsham District Local Plan may only be adopted after having ascertained that it will not result in adverse effect on integrity of the Habitats Sites within scope of this assessment.

Appropriate Assessment is an iterative process as measures can be incorporated in order to be able to ascertain that there is no significant adverse effect on the integrity, before re-screening and making a final assessment.

5. References

1. eCountability Ltd (2014) Habitats Regulations Assessment for Horsham District Planning Framework
2. Horsham District Council (2015) Horsham District Planning Framework
3. Natural England Conservation objectives for European Sites: London and South East: http://publications.naturalengland.org.uk/category/6528471664689152
4. NE Internal Guidance (June 2018) – Approach to Advising Competent Authorities on Road Traffic Emissions and HRAs V1.4 Final: http://publications.naturalengland.org.uk/publication/4720542048845824
5. Natural England and South Downs National Park Authority (2020) - Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol Draft: https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf
6. Tydlesley,D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook, (Feb 2019) edition UK: DTA Publications Limited. Accessed Jan 2020

6. Appendix

Appendix 1. HRA Screening of Individual Housing Allocations & Employment Areas

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA005 - Land north of Furners Lane	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA006 - Barns Green	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA011- Land West of Backsettown Farm	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA039 - Thakeham	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats Sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA055 - Upper Beeding	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA065- Land East of Wantley Hill	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA066 - West Chiltington	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA070 - Warnham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA071 - Warnham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA074 - Horsham, Forest ward	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA076 - Cowfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA080- Rusper Glebe	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA083 - Cowfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA085 - Ashington, Land North of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA101 - Land West of Ifield	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA112 - Pulborough / Codmore Hill	✓	✓	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC, The Mens SAC and Ebernoe Common SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				functionally linked land of the Mens SAC and Ebernoe Common SAC, as well as, impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA118 - Land East of Billingshurst	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats sites.
SA119 - Land West of Southwater	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA129 - Christ's Hospital	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA131 - Ashington, Land South of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				functionally linked land of the Mens SAC.
SA274 - Partridge Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA289- Kilnwood Vale	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA291 - Land West of Kilnwood Vale	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA296 - Land North of Horsham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA317 - Sandgate Nurseries, Henfield	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA320 - Partridge Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA344 - Barns Green	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA361 - Storrington and Sullington	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA366 - Land east of Cowfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA386 - Broadbridge Heath/ Slinfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA393- Woodlands Farm	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA394 - Land at Rookwood Golf Club	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA414 - Land at Mayfield, North east of Henfield	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA420 - Swallowfield	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA429 - Land West of Smock Alley	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA433 - Partridge Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA442 - Rudgwick/Bucks Gree n	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA445 - Pulborough / Codmore Hill	✓	✓	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC, The Mens SAC and Ebernoe Common SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and Ebernoe Common SAC, as well as, impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA450 - Hurst Road Opportunity Site	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA459 - Land at Kingsfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA483 - Upper Beeding	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA486 - Land adjacent to Clay Lane	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA488 - Upper Beeding	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA504- Land South of the Bowls Club	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA510 - Barns Green	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA513 – Thakenham, Land to the south of Furze Common Road`	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA520 - Ashington, Land North of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA524 - Ashington, Land North of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA538 - Small Dole	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA539 - Ashington, Land North of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA556 - Pulborough / Codmore Hill	✓	✓	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC, The Mens SAC and Ebernoe Common SAC. Therefore, there is potential

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and Ebernoe Common SAC, as well as, impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.
SA560 - Land off Marringdean Road	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats sites.
SA565 - Land at Hilland Farm	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats sites.
SA567 - Land at Glayde Farm / Land at Handcross Road	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA568 - North Horsham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA570 - Land Rear of Hilliers Garden Centre	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA574 - Rudgwick/Bucks Green	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats Sites.
SA575 - Land North of Sangate Lane	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA584 - Land south of Church Farm House	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA597 - Land at Adversane	✓	✓	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC, The Mens SAC and Ebernoe Common SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and Ebernoe Common SAC, as well as, impacts of water quantity /

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				quality to the Arun Valley SPA, Ramsar and SAC.
SA609a - Field West of Cowfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA610a - Fields West of Cowfold	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA613 - Barns Green	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats site, because the development could impact upon functionally linked land of the Mens SAC.
SA634 - Partridge Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA639 - Storrington and Sullington	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA656 - Blackthorne Barn	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats Sites.
SA657 - Land at Cedar Cottage	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA716 - Land at Buck Barn, West Grinstead	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA729- Land at Sandygate	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA732 - Storrington and Sullington	✓	×	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC and The Mens SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA735 - Ashington, Land South of Rectory Lane	×	×	✓	**Screen in.** The site is situated within The Mens SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats Site, because the development could impact upon functionally linked land of the Mens SAC.
SA737 - Pucks Croft Cottage and Land South	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA738 - Baldhorns Copse and Land East	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA742 - Steyning and Bramber	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
SA744 - Land West of Billingshurst	✓	✓	✓	**Screen in.** The site is situated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC, The Mens SAC and Ebernoe Common SAC. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites. This could be due to impact upon functionally linked land of the Mens SAC and Ebernoe Common SAC, as well as, impacts of water quantity / quality to the Arun Valley SPA, Ramsar and SAC.

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
SA786 - Land at 19 Gardners Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Land at Lower Broadbridge Farm, Broadbridge Heath	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Land South of Star Road Industrial Estate, Partridge Green	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Land Around Mercer Road, Warnham Station (North)	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Graylands Estate, Langhurstwood Road, Horsham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Broadlands Business Campus, Langhurstwood Road, Horsham	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Rosier Commercial Centre	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the

Housing Allocations & Employment Areas	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Will housing Allocations have Likely Significant Effect (LSE) on Habitats Sites?
				scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats Sites.
Land at Broomers Hill Business Park, Pulborough	×	✓	✓	**Screen in.** The site is situated within The Mens SAC and Ebernoe Common SAC Zone of Influence. Therefore, there is potential for LSE to the qualifying features of the scoped in Habitats sites, because the development could impact upon functionally linked land of the Habitats Sites.
North and south of Buck Barn Petrol Filling Station	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Land South of Hilliers Garden Centre	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.
Land South West of Hop Oast Roundabout	×	×	×	**Screen out**. The site is not situated within the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, no LSE are expected from the proposed development.

Appendix 2. HRA Screening of Individual Policies

Where mitigation is necessary to avoid Likely Significant Effects (LSE), then in line with CJEU *People over Wind* court ruling, this cannot be taken into consideration at HRA Screening Stage 1. Any policies providing mitigation are therefore also carried forward to Stage 2 Appropriate Assessment.

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
Policy 1 - Sustainable Development	×	×	×	×	**Screen out.** The policy indicates that the Council will take a favourable approach to sustainable development, as outlined in the National Planning Policy Framework. It is indicated that the Council will grant permission, unless material considerations indicate otherwise i.e. adverse effects to Habitats sites. Therefore, this policy will cause no LSE.
Policy 2 - Development Hierarchy and Settlement Expansion	×	×	×	×	**Screen out.** The policy indicates that residential development should be prioritised within built-up area boundaries and secondary settlement boundaries, whereas land outside these boundaries must be more strictly controlled. It has been highlighted that all development proposals will need to be of a scale and nature that can retain the character and role of the settlement in terms of the range of services and facilities and community cohesion. Therefore, this policy will cause no LSE, as this policy refers to development hierarchy and not specific site allocations.
Policy 3 - Settlement Expansion	×	×	×	×	**Screen out.** The policy relates to settlement growth being supported if it meets specific criteria, in order to meet identified local housing, employment and community needs. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 4 - Horsham Town	×	×	×	×	**Screen out.** Horsham town is outside of the SSSI Impact Risk Zones of the scoped in Habitats Sites. Therefore, this policy will cause no LSE.

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
Policy 5 - Broadbridge Heath Quadrant	×	×	×	×	**Screen out.** Broadbridge Heath Quadrant is outside of the SSSI Impact Risk Zones of the scoped in Habitats sites. Therefore, this policy will cause no LSE.
Policy 6 - Economic Growth	×	×	×	×	**Screen out.** This policy is seeking to achieve sustainable economic growth for Horsham district to 2036. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 7 - Employment Development	×	✓	✓	✓	**Screen in.** This policy seeks to balance the need to ensure protection of valued employment and commercial sites and to ensure there are sufficient local employment opportunities to meet the needs of the district, whilst enabling sites which are no longer economically viable to be considered for other appropriate uses. A number of allocated employment sites have been included and two sites are situated within the Zone of Influence of the Ebernoe Common Sac & The Mens SAC. Therefore, there is a potential for LSE from these employment sites. In addition, Ashdown Forest SAC has been screened in at precautionary basis, as there could be LSE from adverse air quality to the Habitats Sites, in combination of other plans and projects.
Policy 8 - Rural Economic Development	×	×	×	×	**Screen out.** The policy aims to promote sustainable rural economic development and enterprise within the district in order to generate local employment opportunities and economic social and environmental benefits for local communities. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 9 - Conversion of Agricultural and Rural Buildings to Commercial, Community or Residential Uses	×	✓	✓	×	**Screen in.** The policy relates to the conversion of agricultural, forestry or other rural buildings to commercial, community or residential uses. These conversions will be supported if certain criteria are met, as listed within the policy. However, as agricultural buildings can provide optimum roosting locations for barbastelle and other bat species, these buildings will be

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
					considered functionally linked land if the buildings are proposed to be converted within the Zone of Influence of the Ebernoe Common SAC or The Mens SAC. Therefore, there is a potential for LSE, as mitigation measures are not indicated within the policy wording.
Policy 10 - Equestrian Development	×	×	×	×	**Screen out.** The policy encourages high quality equestrian development for the district. Therefore, this policy will cause no LSE.
Policy 11 - Tourism Facilities and Visitor Accommodation	×	×	×	×	**Screen out.** The policy encourages sustainable tourism and economic growth within the district. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 12 - Retail Hierarchy and Sequential Approach	×	×	×	×	**Screen out.** The policy aims to improve the vitality and viability of the existing retail centres in the district, to ensure that they are able to meet the needs of communities. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 13 - Town Centre Uses	×	×	×	×	**Screen out.** The policy aims to improve the vitality and viability of town centres in the district, to ensure that they are able to meet the needs of communities. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 14 - Housing Provision	✓	✓	✓	✓	**Screen in.** The policy includes reference to the housing allocations for the Local Plan. A number of these individual allocation sites have the potential to result in an LSE to the screened in Habitats sites. In addition, Ashdown Forest SAC has been screened in at precautionary basis, as there could be LSE from adverse air quality to the Habitats sites, in combination with other plans and projects.
Policy 15 - Strategic Site Development Principles	×	×	×	×	**Screen out.** The policy aims to deliver strategic development principles via specific criteria to ensure sustainable development. Therefore, this policy will cause no LSE, as this policy refers to

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
					positive strategic planning and not specific site allocations.
Policy 16 - Affordable Housing	×	×	×	×	**Screen out.** The policy sets out the Council's thresholds and targets for affordable housing. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 17 - Meeting Local Housing Needs	×	×	×	×	**Screen out.** The policy is seeking to achieve a mix of housing sizes, types and tenures to meet the District's housing needs. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 18 - Improving Housing Standards in the District	×	×	×	×	**Screen out.** The policy aims to deliver good quality housing across the district, with consideration with needs of different groups in the community including older people and people with disabilities. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 19- Exceptions Housing Schemes	×	×	×	×	**Screen out.** The policy identifies that land that would not otherwise be released for general marked housing may be released for the development of affordable homes, as long as it meets specific criteria. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 20 - Retirement Housing and Specialist Care	×	×	×	×	**Screen out.** The policy is seeking to deliver increased specialist housing options, with consideration that an older person population is projected within the district. Therefore, this policy will cause no LSE, as this policy refers to positive strategic planning and not specific site allocations.
Policy 21 - Rural Workers' Accommodation	×	×	×	×	**Screen out.** The policy aims to deliver housing for rural workers if there is a need within the area and other specific criteria is met. Therefore, this policy will cause no LSE, as this policy refers to

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
					positive strategic planning and not specific site allocations.
Policy 22 - Replacement Dwellings and House Extensions in the Countryside	×	✓	✓	×	**Screen in.** The policy is seeks to ensure that any replacement dwellings, house extensions and outbuildings are of an appropriate scale, siting and design, and have due regard to the countryside setting and the existing dwelling. However, as countryside housing can provide optimum roosting locations for barbastelle and other bat species, these buildings will be considered functionally linked land if the buildings are proposed to be converted within the Zone of Influence of the Ebernoe Common SAC or The Mens SAC. Therefore, there is a potential for LSE, as mitigation measures are not indicated within the policy wording.
Policy 23 - Ancillary Accommodation	×	×	×	×	**Screen out.** The policy indicates that residential annexes will be viewed favourably if certain criteria are met. Therefore, this policy will cause no LSE.
Policy 24 - Gypsy and Traveller Accommodation	✓	×	×	×	**Screen in.** The policy indicates that the council will meet the requirements of Gypsy, Traveller and Travelling Showpeople accommodation. Further sites will only be allocated if they meet certain criteria, as highlighted within the policy. Therefore, there is possible LSE if current or future sites are allocated within the Zone of Influence of the Arun Valley SPA, Ramsar and SAC. i.e. water quality, air pollution & recreational disturbance.
Policy 25 - Environmental Protection	×	×	×	×	**Screen out.** The policy relates to minimise exposure to, and the emission of, pollutants including noise, odour, vibration, air and light pollution arising from all stages of development. Therefore, this policy will be positive for the identified Habitats Sites and will cause no LSE.
Policy 26 - Air Quality	×	×	×	×	**Screen out.** The policy relates to minimising air quality within the district. Therefore, this policy will be positive for the identified Habitats sites and will cause no LSE.

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
Policy 27 - The Natural Environment and Landscape Character	×	×	×	×	**Screen out.** The policy seeks to ensure that development proposals are landscape led from the outset. This will ensure that new developments protect, conserve and enhance the landscape and townscape character, as well as, maintaining and enhancing existing networks for the natural environment and landscape character. Therefore, this policy will cause no LSE.
Policy 28 - Countryside Protection	×	×	×	×	**Screen out.** The policy ensures that the rural character and undeveloped nature of the countryside will be protected against inappropriate development via select criteria. Therefore, this policy will cause no LSE.
Policy 29 - Settlement Coalescence	×	×	×	×	**Screen out.** The policy indicates that landscapes will be protected from development which would result in the coalescence of settlements in order to protect local identity and a sense of place. Therefore, this policy will cause no LSE.
Policy 30 - Protected Landscapes	×	×	×	×	**Screen out.** The policy indicates that High Weald AONB and the South Downs National Park will be conserved and enhanced via specific measures. Therefore, this policy will cause no LSE.
Policy 31 - Green Infrastructure and Biodiversity	×	×	×	×	**Screen out.** The policy relates to good design of all developments to conserve and enhance biodiversity. In addition, it highlights that project level HRA's will be required for all developments which have the potential to impact indicated Habitats Sites. Therefore, this policy will cause no LSE, as it will likely have a positive benefit to the screened in Habitats Sites, via the creation of further functionally linked land.
Policy 32 - Local Greenspace	×	×	×	×	**Screen out.** The policy relates to the protection of Local green and open spaces, unless specific criteria are met. Therefore, this policy will cause no LSE.
Policy 33 - The Quality of All New Development	×	×	×	×	**Screen out.** The policy ensures that new developments in the district promote a high standard of design, architecture and landscape, while protecting locally distinctive character and

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
					creating a 'sense of place'. Therefore, this policy will cause no LSE.
Policy 34 - Development Principles	×	×	×	×	**Screen out.** The policy ensures that new developments are of a high quality, In order to conserve and enhance the natural and built environment. Therefore, this policy will cause no LSE.
Policy 35 - Heritage Assets and Managing Change within the Historic Environment	×	×	×	×	**Screen out.** The policy relates to good practices involving heritage assets, in order to preserve and enhance the districts historic environment. Therefore, this policy will cause no LSE.
Policy 36 - Shop Fronts and Advertisements	×	×	×	×	**Screen out.** The policy ensures that shop fronts, and advertising undertake a sensitive approach, particularly in Conservation Areas and Listing Buildings. This policy includes sensitive design of illumination. Therefore, it is highlighted that illumination of shopfronts could cause impacts to bat species if present within rural locations. However, it is considered unlikely that barbastelles or other qualifying features of Ebernoe Common Sac & The Mens SAC will be affected, as the species do not typically inhabit built up areas. Therefore, this policy will cause no LSE to the identified Habitats sites.
Policy 37 - Climate Change	×	×	×	×	**Screen out.** The policy ensures a proactive approach to minimise vulnerability and provide resilience to the negative effects of climate change. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 38 - Appropriate Energy Use	×	×	×	×	**Screen out.** The policy aims to avoid future development in Horsham district having a significant impact on the consumption of energy and resources, resulting in global heating. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 39 - Sustainable	×	×	×	×	**Screen out.** The policy aims to ensure sustainable design and construction is delivered

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
Design and Construction					in all new development via select criteria. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 40 - Flooding	×	×	×	×	**Screen out.** The policy requires that all new developments must mitigate against existing and potential flood risks I.e. through a sequential approach and implementation of SUDs. Therefore, this policy will cause no LSE.
Policy 41 - Infrastructure Provision	×	×	×	×	**Screen out.** The policy indicates that new developments may only be granted if there is either existing local infrastructure to meet the additional requirements arising from a new development, or suitable necessary mitigation arrangements for the improvement of existing infrastructure. Therefore, this policy will cause no LSE.
Policy 42 - Sustainable Transport	×	×	×	×	**Screen out.** The policy indicates that new developments must promote and deliver sustainable transport systems via specific criteria. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 43 - Parking	×	×	×	×	**Screen out.** The policy seeks to ensure that sufficient car parking facilities are provided both in residential developments, at employment sites and town centres in line with specific criteria. It also addresses off-airport parking facilities related to Gatwick Airport will not be approved unless a need can be demonstrated. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 44 - Gatwick Airport Safeguarded Land	×	×	×	×	**Screen out.** The policy indicates that Gatwick Airport safeguarded land will continue to be safeguarded until further government clarification is provided. Therefore, no LSE will be caused, as this policy refers to positive strategic planning which is outside of the Zone of Influence of the scoped in Habitats sites.
Policy 45 - Inclusive Communities,	×	×	×	×	**Screen out.** The policy indicates that development proposals must take positive measures to create a socially inclusive and

Policy	Arun Valley SPA, Ramsar and SAC	Ebernoe Common SAC	The Mens SAC	Ashdown Forest SAC	Will Policy have Likely Significant Effect (LSE) on Habitats Sites?
Health and Wellbeing					adaptable environment to meet the long term needs of a range of occupiers and users and to ensure they are accessible to all members of the community. It also indicates that new development must be designed to achieve healthy, inclusive and safe places, which enable and support healthy lifestyles and address health and wellbeing needs. Therefore, no LSE will be caused, as this policy refers to positive strategic planning.
Policy 46 - Community Facilities, Leisure and Recreation	×	✓	✓	×	**Screen in.** The policy identifies the provision of new or improved community facilities or services will be supported, if specific criteria are met. This includes ensuring that lighting proposals, including floodlighting, must seek to minimise light pollution for habitats/species. Therefore, it is considered some proposals could affect the qualifying features of Ebernoe Common Sac & The Mens SAC, if they are present within the Zone of Influence of these Habitats Sites. Therefore, there is a potential for LSE from this Policy, as specific mitigation measures are not indicated within the policy wording.

Appendix 3. Characteristics of Habitats sites

Site name	Area (ha)	Qualifying Features	Conservation objectives (only available for SACs & SPAs)	Key vulnerabilities / factors affecting site integrity
Arun Valley The Arun Valley in West Sussex is located just north of the South Downs escarpment. It consists of low-lying grazing marsh, largely on alluvial soils, but with an area of peat derived from a relict raised bog. Variation in soils and water supply lead to a wide range of ecological conditions and hence a rich flora and fauna. Southern parts of the Arun Valley are fed by calcareous springs, while to the north, where the underlying geology is Greensand, the water is more acidic. The history of management of fields, and their water levels, determines the plant communities present, with drier fields dominated by meadow grasses, Crested Dog's-tail *Cynosurus cristatus* and Perennial Rye-grass *Lolium perenne*. In wetter areas, rushes, sedges and Tufted Hair-grass *Deschampsia cespitosa* are more frequent. Ungrazed fields have developed into fen, scrub or woodland. Fen areas consist of Common Reed *Phragmites australis*, Reed Sweet-grass *Glyceria maxima* and Greater Tussock-sedge *Carex paniculata*, often with scattered elder *Sambucus* sp. and sallow scrub. On firmer ground, there is Alder *Alnus glutinosa*, Willow *Salix* sp., Birch *Betula* sp., and sallow, with Oak *Quercus robur* and Hazel *Corylus avellana* woodland on the driest ground. The ditches and margins between grazing marsh fields have an outstanding aquatic flora and invertebrate fauna. The Arun Valley supports important numbers of wintering waterbirds, which feed in the wetter, low-lying fields and along ditches. The Arun Valley SPA is situated within the South Downs National Character Area (NCA Profile 125).				
Arun Valley Ramsar	528.6	**Ramsar criterion 2** The site holds seven wetland invertebrate species listed in the British Red Data Book as threatened. One of these, *Pseudamnicola confusa*, is considered to be endangered. The site also supports four nationally rare and four nationally scarce plant species **Ramsar criterion 3** In addition to the Red Data Book invertebrate and plant species, the ditches intersecting the site have a	N/A	N/A

		particularly diverse and rich flora. All five British duckweed (*Lemna* species), all five water-cress (*Rorippa* species), and all three British water milfoils (*Myriophyllum* species), all but one of the seven British water dropworts (*Oenanthe* species), and two-thirds of the British pondweeds (*Potamogeton* species) can be found on site. **Ramsar criterion 5** Assemblages of international importance: • Species with peak counts in winter- 13774 waterfowl (5 year peak mean 1998/99-2002/2003) Species/populations identified subsequent to designation for possible future consideration under criterion 6: • Species with peak counts in winter: Northern pintail , *Anas acuta*, NW Europe 641 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)		
Arun Valley SAC	487.48	**Qualifying Species:** • Little whirlpool ram's-horn snail *Anisus vorticulus*	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation	**Inappropriate water levels** Environment Agency is ceasing to administer Internal Drainage Board (IDB) ditches, and water control structures, with the likelihood that management will revert

			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.	to landowners/Local Authorities. This has implications for management/clearance of the ditches and maintenance of water controlling structures. There could be impacts on water levels, the marginal and in-channel flora and associated species. *Anisus vorticulus* is not known to tolerate occasional ditch drought (M.Willings, Pers Comm 2014). Bewick's Swan and the majority of water bird assemblage species for which the site is classified require large bodies of in field water and water levels maintained within the ditch systems. The Environment Agency are reviewing management of river bank defences adjacent to the Special Protection Area/Site of Community Importance in the medium term (beyond 10 years) as part of the Lower Tidal River Arun Strategy (LTRAS) project. If the banks are not maintained, there will be a permanent increase in water levels, with added risk of changes in salinity, water levels, and increasing water pollution (rivers Stor and Arun failing for phosphorus levels). *Anisus vorticulus* is not known to have a tolerance for elevated salinity levels. The majority of Ramsar plant species (also key supporting

				habitat for *A.vorticulus* and Bewick's swan) are intolerant of poor water quality. Impacts of increased salinity largely unknown. **Water pollution** There's a risk that undetected deterioration in the quality of water entering the ditch systems is impacting upon SPA/SCI/Ramsar species. *Anisus vorticulus* requires good water quality. An important food source for Bewick's swan is *Potamogeton* spp. (pond weeds), which also requires good water quality, as do the majority of aquatic plant species for which the Ramsar is designated, and which is the essential supporting habitat for *A.vorticulus*. The rivers Arun and Stor are failing on phosphate levels. Directly linked to this is point source pollution from a sewage treatment works upstream of the site. There may also be a risk of increased levels of nutrients entering the site through flooding, especially if the river banks are not maintained (see issue of changes in water levels). The classified bird species are also vulnerable to increased levels of nutrient enrichment as there is an increased likelihood of certain disease.

				Increase in growth of vegetation from sustained nutrient enrichment can make the habitat unsuitable for many bird species (Literature Review, Mott McDonald, 2006). Diffuse pollution from agricultural run-off is likely to be contributing to the phosphate levels (this issue is managed via Catchment Sensitive Farming). **Inappropriate ditch management** This is linked to issue 1 and possible cessation or changes in the method and frequency of ditch management/clearance. *Anisus vorticlus* is sensitive to changes in, and cessation of ditch management, as are the marginal and in-channel flora. The management requirements of *A. vorticulus* are little understood, so further research is required. Further surveys are also required- there has not been a full survey of *A. vorticulus* at Amberley since 1997. A full survey has been undertaken at Pulborough 2013/14, but repeat surveys will be necessary. **Disturbance** The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may

				substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, and presence of people, animals and structures
Arun Valley SPA	530.42	**Qualifying species**: • A037, Bewick's swan; *Cygnus columbianus bewickii* (non-breeding) During the time of site notification, the SPA supported 115 individuals representing at least 1.6% of the wintering population in Great Britain (5 year peak mean 1992/93 - 1996/97).	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	**Similar to the SAC site (above)**

		Qualifying assemblage of species: During the non-breeding season the SPA regularly supports an assemblage of waterfowl with the area regularly supporting 27,241 individual waterfowl (5 year peak mean for 1992/93 to 1996/97) including: • Shoveler; *Anas clypeata*, • Teal; *Anas crecca*, • Wigeon; *Anas penelope*, • Bewick's Swan; *Cygnus columbianus bewickii* **Qualifying habitats (which support wintering birds):** • MG5 *Cynosurus cristatus-Centaurea nigra* lowland meadows • MG13-related; Inland wet grassland • S5 *Glyceria maxima* (Reed Sweet-grass) swamp • S22 *Glyceria fluitans* (floating-sweet grass) water-margin vegetation • Network of ditch systems	– 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.	
Ashdown Forest				

The underlying geology of Ashdown Forest is mostly sandstone, predominantly the Lower Cretaceous Ashdown Formation. This forms a layer varying from 500 feet (150 m) to 700 feet (210 m) thick, consists of fine-grained, silty interbedded sandstones and siltstones with subordinate amounts of shale and mudstone. It is the oldest Cretaceous geological formation that crops out in the Weald. The underlying sandstone geology of the Ashdown Sands, when combined with a local climate that is generally wetter, cooler and windier than the surrounding area owing to the forest's elevation, which rises from 200 feet (61 m) to over 700 feet (210 m) above sea level, gives rise to sandy, largely podzolic soils that are characteristically acid, clay, and nutrient-poor. On these poor, infertile soils have developed heathland, valley mires and damp woodland. These conditions have never favoured cultivation and have been a barrier to agricultural improvement. Ashdown Forest's origins lie as a medieval hunting forest created soon after the Norman conquest of England. Ashdown Forest has a rich archaeological heritage. It contains much evidence of prehistoric human activity, with the earliest evidence of human occupation dating back to 50,000 years ago. There are important Bronze Age, Iron Age and Romano-British remains. Ashdown Forest contains one of the largest single continuous blocks of lowland heath in south-east England, with both dry heaths and, in a larger proportion, wet heath. The survival of the forest's extensive heathlands has become all the more important when set against the large-scale loss of English lowland heathland over the last 200 years; within the county of East Sussex, heathland has shrunk by 50% over the last 200 years, and most of what remains is in Ashdown Forest. The damming of streams, digging for marl, and quarrying have produced several large ponds in a number of areas of the forest. The site supports important assemblages of beetles, dragonflies, damselflies and butterflies, including the nationally rare silver-studded blue *Plebejus argus*, and birds of European importance, such as European nightjar *Caprimulgus europaeus*, Dartford warbler *Sylvia undata* and Eurasian hobby *Falco subbuteo*.				
Ashdown Forest SAC	2729	**Qualifying habitats**: • H4010 Northern Atlantic wet heaths with *Erica tetralix* • H4030 European dry heaths **Qualifying species:** • S1166 Great crested newt; *Triturus cristatus*	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	**Change in land management** Only one third of the heathland is currently grazed. Favourable condition requires a diverse vegetation structure and grazing, in combination with some mechanical management, can achieve this. The heathland would be improved by more cattle, less sheep and a few ponies. The ability to target animals to specific areas would also be beneficial to the heathland. The sheep will often tend to congregate close to the roads and their tight grazing has resulted in a grass dominated sward in these areas, with some areas further away

			– 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.	from the roads only lightly grazed and dominated with *Molinia* tussocks. **Air Pollution: impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. Vegetation is becoming increasingly grass dominated where previously it was heather dominated. **Public Access/Disturbance** There is potential for increased visitor pressure (in particular dogs off leads) to impact on breeding birds, particularly Nightjar which is a ground nesting bird, but also Dartford Warbler as it can nest low in the gorse. There is some work going on to reduce this pressure, which is currently funded by developers. Long-term monitoring is needed to establish impacts, alongside actions to mitigate the disturbance in partnership with the existing work. **Hydrological changes** The botanical diversity of the wet heath (and valley mire systems and bogs encompassed within it) has declined over the last few decades. We don't have sufficient information/evidence/survey to

				understand why this is the case. It is also suspected that *Rhynchospora alba* SAC habitat is present at Ashdown Forest, but the wet heath/bogs have declined in recent years and our current level of survey information/evidence is inadequate.
Ashdown Forest SPA	3207.08	Qualifying species: • A302 Dartford warbler; *Sylvia undata* (breeding) • A224 Nightjar; *Caprimulgus europaeus* (breeding)	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.	**Similar to the SAC (above)**
Castle Hill				

This chalk grassland consists of a mosaic of calcareous semi-natural dry grasslands, notably *Festuca ovina – Avenula pratensis* grassland, *Bromus erectus* grassland and *Brachypodium pinnatum* grassland. Castle Hill's important assemblage of rare and scarce species includes early spider-orchid *Ophrys sphegodes* and burnt orchid *Orchis ustulata*. The colony of early spider-orchid is one of the largest in the UK. The site also supports a colony of Early gentian *Gentianella angelica.*				
Castle Hill SAC	114.68	**Qualifying habitats:** • Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites). Dry grasslands and scrublands on chalk or limestone (important orchid sites) **Qualifying species**: • Early gentian; *Gentianella anglica*	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,	**Undergrazing** There is insufficient cattle grazing in parts of the site leading to encroachment by gorse and coarser grasses, such as Tor grass, which can shade out the important chalk grassland plants, including orchids and early gentian **Fertilizer use** Management of land bordering the SAC; All of the arable parcels surrounding the site which slope down to the SAC boundary, when cultivated, pose potential threats through erosion and leaching/run-off. This could lead to loss of species diversity due to soil enrichment. **Air Pollution: impact of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads. The effects of this could cause: an increase in tall grasses, decline in diversity, increased mineralisation, surface acidification or N leaching.

			– The distribution of qualifying species within the site	
Chichester and Langstone Harbours This site comprises part of the Solent. 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. 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 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.				
Chichester and Langstone Harbours Ramsar	5810.03	**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**		

		Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: • Ringed plover; *Charadrius hiaticula*, 853 individuals (5 year peak mean 1998/9-2002/3) • Black-tailed godwit; *Limosa limosa islandica*, 906 individuals, (5 year peak mean 1998/9- 2002/3) • Common redshank; *Tringa totanus totanus,* 2577 individuals (5 year peak mean 1998/9- 2002/3) Species with peak counts in winter: • Dark-bellied brent goose; *Branta bernicla bernicla,* 12987 individuals (5 year peak mean 1998/9- 2002/3) • Common shelduck; *Tadorna tadorna*, 1468 individuals, (5 year peak mean 1998/9-2002/3) • Grey plover; *Pluvialis squatarola*, 3043 individuals, (5 year peak mean 1998/9-2002/3)		

		• Dunlin; *Calidris alpina alpina*, 33436 individuals, (5 year peak mean 1998/9-2002/3)		
Chichester and Langstone Harbours SPA	5810.95	Qualifying species: • A046a – Dark bellied brent goose; *Branta bernicla bernicla* (Non-breeding) • A048 Common shelduck; Tadorna tadorna; (Non-breeding) • A050 Eurasian wigeon; (Anas penelope Non-breeding) • A052 Eurasian teal; *Anas crecca* (Non-breeding) • A054 Northern pintail; *Anas acuta* (Non-breeding) • A056 Northern shoveler; *Anas clypeata*; (Non-breeding) • A069 Red-breasted merganser; *Mergus serrator* (Non-breeding) • A137 Ringed plover; *Charadrius hiaticula* (Non-breeding)	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.	**Public access and disturbance** Many human activites in the area can disturb birds. This includes activities such as: walking; dog walking; bird watching; boating; kayaking; kite surfing; hang gliding; paramotors; jet skis; wildfowling; model helicopters/aircraft; boat mooring, and Hovercraft. Recreational activities can also 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. There is also an impact on birds due to the loss of habitat for feeding, roosting and breeding. In some areas rising sea levels will result in coastal grasslands being lost to more saline grasslands, thus losing habitat for

		• A141 Grey plover; *Pluvialis squatarola* (Non-breeding) • A144 Sanderling; *Calidris alba*; (Non-breeding) • A149 Dunlin; *Calidris alpina alpina* (Non-breeding) • A157 Bar-tailed godwit; *Limosa lapponica* (Non-breeding) • A160 Eurasian curlew; *Numenius arquata* (Non-breeding) • A162 Common redshank*; Tringa totanus* (Non-breeding) • A169 Ruddy turnstone; *Arenaria interpres*; (Non-breeding) • A191 Sandwich tern; *Sterna sandvicensis* (Breeding) • A193 Common tern; *Sterna hirundo* (Breeding) • A195 Little tern; *Sterna albifrons* (Breeding) • Waterbird assemblage		some breeding waders of the waterbird assemblage. 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** Dredges (inc. Hydraulic), Benthic trawls and seines and Shore-based activities are categorised as 'Red' for these interest features (and specifically the sub-features: Intertidal muddy sand communities; Subtidal eelgrass Zostera marina beds as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS), and

				requisite mechanisms are being or will be implemented by Southern IFCA and Sussex IFCA. Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs require assessment and (where appropriate) management. This assessment will be undertaken by SIFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site. 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 habitat and bird species 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). 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 & Pilotage. **Changes in species distribution** Many waders and wildfowl are decreasing in the Solent probably as they move north and east under national trends. Some fish, such as Sand eels, may be moving their breeding grounds resulting in less food availability for breeding terns. Invertebrate populations in the intertidal muds are changing and this may disadvantage some wintering wader species. Desmoulin's Whorl Snail has decreased dramatically. Areas of salt-marsh are eroding and decreasing resulting in decreasing breeding gulls and terns as their habitat decreases and decreasing plant species of salt-marshes. **Climate change** Climate change has impacts upon coastal species, in that gull and tern colonies are more frequently washed out with rising sea levels when storm surges cause flooding to habitats.

				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/SPA . Percolation of sea water through sea walls is causing saline intrusion into non-saline grassland habitats and changing them **Change to site conditions** There is an increasing loss of salt-marsh 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. **Other** SAC/SPA boundaries may not cover the

				extent of all Annex 1 and Annex 2 features and/or supporting habitats **Direct land take to development** Private sea defences are causing disruption to the natural processes of allowing erosion to move sediments around the SAC. **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. **Changes to 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 predator 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 impacts from third parties** 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. Military helicopters cause disturbance to wintering birds. 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
Duncton to Bignor Escarpment The site itself is an example of mature beech *Fagus sylvatica* woodland located on a steep scarp face of the South Downs. The site has developed over chalk which is overlain in places by a clay-with-flints capping. The resulting soil conditions have produced beech dominated mosaic with: ash *Fraxinus excelsior* woodland, scrub and chalk grassland. The high habitat quality present at Duncton to Bignor Escarpment has allowed many rare plants to flourish such as white helleborine *Cephalanthera damasonium*, yellow bird's nest *Monotropa hypopitys*, and limestone fern *Gymnopcarpium robertium*. The scrubby woodland is also home to the largest British colony of the rare snail *Helicodonta obvoluta*, and a notable assemblage of rare moth species, many of which are dependent on the scrubby woodland at Duncton Down.				
Duncton to Bignor Escarpment SAC	214.47	**Qualifying habitats** • H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils	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 the qualifying natural habitats rely	No current issues affecting the Natura 2000 feature(s) have been identified on this site

Ebernoe Common Ebernoe Common is an extensive complex of ancient woodland and former wood pasture in West Sussex, five miles south-east of Haslemere. The central core of the site, approximately a third of the total area, forms Ebernoe Common National Nature Reserve. It is a varied site with a range of woodland communities and age structures which have developed due to differences in underlying soils and past management. This range of conditions together with a long continuity of woodland cover has in turn resulted in the site supporting an outstanding diversity of species: Barbastelle and Bechstein's bats, which favour ancient woodland, breed in the site because it provides suitable roosting and feeding habitats. While Bechstein's feed exclusively in the woodland, Barbastelles commute into the surrounding countryside using the woodland corridors which branch out from the site. In addition, the native trees, particularly those with old growth characteristics, support rich lichen and fungal communities, including a number of rare and scarce species, and the woodland complex as a whole supports a diverse breeding bird assemblage.				
Ebernoe Common SAC	234.05	**Qualifying habitats** • H9120 Atlantic acidophilous beech forests with Ilex **Qualifying species** • S1308 Barbastelle bat; *Barbastella barbastellus* • S1323 Bechstein's bat; *Myotis bechsteini*	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	**Forestry and woodland management** Woodland management for SSSI features (lichens, invertebrates) which require higher light levels may have a significant impact on the bat species. Additionally some management of the beech woodland is necessary in places. More information about potential impacts on bat species is required. **Offsite habitat availability/ management** The protected site is limited woodland core area where breeding colonies are known to exisit. The bats, however, rely on commuting and foraging habitat outside of the site and this needs to be better understood, protected and appropriately managed. It would also be useful to understand how this site relates to other

			and the habitats of qualifying species rely – The populations of qualifying species, and, – The distribution of qualifying species within the site.	bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Habitat fragmentation** Ebernoe Common and The Mens are similar SACs which lie within 5km of each other. It is likely that the bat populations of both sites are genetically linked. Barbastelle bats are known to commute more than 5km and there is continuous woodland cover between the sites to allow Bechstein's to travel. There is a case to investigate whether the two sites should be treated within one overarching Natura 2000 site. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Changes in land management** Land management in the surrounding countryside will have an impact on foraging areas for Barbastelle bats but at present the forage requirements (how much habitat and of what type) are poorly understood.

				Ultimately, inadequate foraging will impact on breeding success within the site. Further investigation of foraging and bat commuting route requirements of notified bat species is required, informing better management of mature hedgerows which need to be restored and maintained in the area around the site. **Hydrological changes** Recent research has shown that water availability (ponds and streams) within Bechstein's breeding sites is likely to be important. Housing development around the site and hydrological changes in the local area could impact on the availability of these habitats **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation. **Public access and disturbance** It is known that light pollution has an

				impact on both myotis species, ie Bechstein's and Horseshoe bats. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat movements/roosting availability in and around the SAC areas.
Kingley Vale Kingley Vale is approximately 208.5 hectares in size and is situated within both the South Downs National Character Area (NCA Profile 125) and National Park. The site has great archaeological significance, hosting 14 scheduled ancient monuments including Bronze Age and Roman earthworks such as: burial mounds, cross dykes, a camp and a field system. The Yew *Taxus baccata* woodlands of Kingley Vale are considered to be among the largest and best in Europe; it also contains an important grove of ancient Yews some of which are at least 500 years old. The Yew woodland is considered to be of such high quality in part because of the presence of successional stages from scrub grassland to mature woodland, which are provide a high variation in woodland structure and function, which is important for many breeding birds and invertebrates including: Red kites *Milvus milvus*, the forester moth *Adscita statices* and the nationally rare fly *Doros sonopseus*. The remainder of woodland which is not pure yew woodland is mixed woodland chiefly comprised of yew, ash and oak. In addition to woodland the site contains three nationally uncommon habitats: chalk grassland, juniper scrub and Yew scrub. The chalk grassland in particular is rich in flowering plants dominated by sheep's fescue *Festuca ovina*, meadow oat *Avenula pratensis* and salad burnet *Sanguisorba minor*. Several uncommon plants are also present, including: autumn gentian *Gentianella amarella*, roundheaded rampion *Phyteuma tenerum*, bee orchid *Ophrys apifera*, autumn lady's tresses *Spiranthes spiralis* and fly orchid *Ophrys insectifera*.				
Kingley Vale SAC	208.5	**Qualifying habitats**: • H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone.	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;	**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.

		• H91J0. Taxus baccata woods of the British Isles; Yew-dominated woodland	– 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	**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: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds site relevant critical loads

Lewes Down

Lewes Downs is an isolated block of downland which forms part of the South Downs. It is important for the extremely rich chalk grassland and scrub vegetation, which contains a number of southern and oceanic-southern species as well as a nationally rare orchid. The site also supports a rich invertebrate fauna including a rare moth, and an important breeding community of downland birds. This block of downland has a south-facing scarp slope which is an unusual feature within the South Downs. The majority of the site comprises unimproved species-rich chalk grassland, developed on steep slopes over thin rendzina soils. Other habitats which add to the diversity and interest of the site include areas of mixed scrub and semi-natural woodland

Lewes Down SAC	146.86	**Qualifying habitats** • H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)	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	**Game management: pheasant rearing** High numbers of pheasants can have adverse impacts on invertebrate communities, in particular, the larvae of important Lepidoptera species. This is particularly acute around areas with feeding bins; in this case, the woodland shaws. Inappropriate management of the grassland communities, in particular, undergrazing and allowing scrub to invade has negative impacts on the plant community. Such management can occur where the grassland community is being used for 'driving' birds to shoot. **Undergrazing** The sward over much of Mt. Caburn tends to be uniform. A change to cattle or native pony grazing could help to improve this situation. **Public access and disturbance** Unconsented activities, including large-scale organised gatherings can create serious damage through trampling, particularly where these are concentrated in small areas of the site.

				Air Pollution: risk of atmospheric nitrogen deposition Nitrogen deposition exceeds site relevant critical loads
Mole Gap to Reigate Escarpment The Mole Gap to Reigate Escarpment SAC occupies an extensive area of the Chalk ridge which forms the escarpment of the North Downs in Surrey. There is a wide range of aspect, gradient and soil types which gives rise to a wide diversity of habitat type. A striking feature of the landscape is the very steep valley cut through the escarpment by the River Mole, giving rise to natural chalk cliffs, a rare feature in the UK. The landscape also includes an extensive area of south-facing chalk escarpment, as well as several dry valleys and elevated, gently-sloping ground on the plateau. The character of the landscape is predominantly rural and unspoilt by development. It is a highly wooded landscape but with extensive areas of open downland, particularly on the south facing scarpment. There is a wide range of soil depth and soil type ranging from very thin, highly alkaline, chalky soil through moderately nutrient-rich and moisture-retentive but still alkaline soils on the less steeply sloping areas through to poorly draining, acidic soils formed on deep deposits of Clay-with-Flints, a deposit derived from Tertiary and Cretaceous age sediments of clay-rich, silty or sandy material containing unworn flint. The steep slopes and areas of chalk scree support unusual vegetation types with an assemblage of scarce lichens. The habitat mosaic includes very species-rich chalk grassland, beech, ash and yew woodland, mixed chalk scrub including juniper, and on the plateau, an extensive area of 'chalk heath' where chalk-loving plants grow alongside those typically associated with acidic soils. There is evidence of human activity throughout the landscape with numerous ancient limekilns, mines, quarries, flint pits and sunken trackways.				
Mole Gap to Reigate Escarpment SAC	887.68	**Qualifying habitats** • H4030 European dry heaths • H5110 Stable steppe formation with *B. sempervirens* on rock slopes • H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites")	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	**Disease** Box blight has been recorded on the site and has been shown to be spreading and affecting the SAC feature "stable steppe formation with *B. sempervirens* on rock slopes". This is the only native site for this feature. **Inappropriate scrub control** Scrub is encroaching onto the chalk grassland. This can quite quickly shade out

		• H6211 Dry grasslands and scrubland facies: important orchid sites • H9130 *Asperulo-Fagetum* beech forests • H91J0 *Taxus baccata* woods of the British Isles **Qualifying species** • S1166 Great crested newt, *Triturus cristatus* • S1323 Bechstein's bat, *Myotis bechsteini*	– 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.	more delicate and rare plant species found on the chalk slopes, and any associated insect species are also therefore negatively impacted on. **Change in land management** To maintain a species-rich sward and its associated insects and other invertebrates, chalk grasslands require active management - some parts of the site do not have appropriate active management. Without it the grassland will rapidly become dominated by rank grasses, such as Tor-grass. Together with the build-up of dead plant matter, less vigorous species will be suppressed and the diversity of the site will decrease. Eventually, the site will scrub over. Traditionally, management is achieved by grazing. The timing will vary both between and within sites, according to local conditions and specific species requirements. **Public access and disturbance** As a beautiful place to visit, this area of Surrey is heavily populated. Increasing pressure by increased numbers of visitors on protected sites and disturbance on the species which live here can become damaging. Trampling of orchid-rich

				grasslands, repetitive disturbance to Great crested newt breeding ponds, and spread of disease (such as box blight) are examples. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.
Pagham Harbour Pagham Harbour is located South East of Chichester between Selsey and Bognor Regis and comprises an extensive central area of saltmarsh and tidal mudflats, with surrounding habitats including lagoons, shingle, open water, reed swamp and wet permanent grassland. All are supporting habitats for the breeding SPA bird species common tern and little tern and over-wintering brent goose and ruff. Species identified for possible future consideration include and Pintail and Black-tailed godwit. Most of the site is currently managed as RSPB local nature reserve.				
Pagham Harbour SPA	629.01	**Qualifying species:** • A193 Common tern; *Sterna hirundo* - (breeding) • A675 Dark-bellied Brent goose; *Branta bernicla bernicla* (non-breeding)	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;	**Physical modification** Church Norton shingle Spit is accreting from the west, towards Pagham beach. In recent years there has been a pulse of sediment that has led to an extension of the spit which is also causing changes to the location and size of the harbour mouth

		• A195 Little tern; *Sterna albifrons* (breeding) • A151 Ruff; *Philomachus pugnax* (non-breeding)	– 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.	and has led to risk of coastal erosion. Changes to the shingle spit may also lead to a natural closure of the channel, leading to changes in the wetland areas behind the spits. This could affect the breeding, roosting and feeding habitats of many of the bird species currently using the intertidal areas. It is not clear if, to what extent, or how quickly this would happen. The issue is the subject of ongoing discussion with the EA and others in terms of flood risk and coastal erosion issues. **Public access and disturbance** This site has open access over the shingle beach areas, which includes along with other species, Little tern nesting sites and Brent geese feeding and roosting areas. The public footpath and open access areas are regularly used by walkers, bird watchers, dog walkers, anglers and kite surfers. The tern nesting area is fenced off during breeding season but many birds are disturbed by dogs being walked off leads. At Sidlesham Quay people are able to launch into the harbour at high tide from outside the LNR, as well as during low tide from within the LNR, this causes trampling of the saltmarsh and other habitats. The

				bylaws and best practice protocols are not always adhered to or (in the case of the byelaws) enforced due to its size, use and the available number of LNR staff. **Water Pollution** The Pagham Lagoon and Harbour both receive fresh water from agricultural land drainage through rife systems. Pagham lagoon in particular is vulnerable to freshwater ingress as it has limited saline input and also receives surface water via road drains, and other drains and overflows. The pollutants and nutrients possibly present in the surface runoff could threaten the water quality of the lagoon. It is thought that the surface water drainage system is somehow connected to the sewage system (through piecemeal development in Pagham) causing it to overflow back into the surface water. Any remedy based on the outcomes of an Surface Water Management Plan and infiltration study lead by West Sussex County Council (in partnership) will likely lead to a multi-agency approach with a possible outcome utilising "sustainable urban drainage systems" or similar. Given the potential closure of the harbour by the

				shingle spit (priority 1); water pollution could become an issue over the long term for the inner harbour. **Fisheries: Commercial marine and estuarine** Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in EMSs require assessment and (where appropriate) management. This assessment will be undertaken by Sussex IFCA. For activities categorised as 'green', these assessments should take account of any in combination effects of amber activities, and/or appropriate plans or projects, in the site. Set netting, hand gathering of shellfish, and bait digging are the main activities occurring in the site. **Fisheries: Recreational marine and estuarine** Bait digging and angling occur within the harbour. They were previously managed through a West Sussex County Council permitting scheme, which limited how much the activity could occur within the site, but this is no longer the case. There is

				therefore currently no mechanism to restrict this activity in a relatively 'pristine' site. **Change in land management** Some areas of land under agricultural use within the wet grassland are currently outside the management control of the RSPB or an environmental scheme (i.e. they are not within Environmental Stewardship or other formal management). NE is looking to target landowners to get the land into appropriate management either through the RSPB scheme or separately.
Pagham Harbour Ramsar		**Ramsar criterion 6**: Qualifying Species/populations (as identified at designation)- species with peak counts in winter: • Dark-bellied brent goose; *Branta bernicla bernicla*, 2512 individuals (5 year peak mean 1998/9-2002/3) Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter:		**Similar to SPA site (above)**

		• Black-tailed godwit; *Limosa limosa islandica*, 377 individuals, (5 year peak mean 1998/9-2002/3)		
Rook Clift Rook Clift is a small wooded combe on the scarp slope of the South Downs. The soils are predominantly calcareous in nature, overlying the chalk of the Downs. Deeper soils occur at the foot of the slope, and also the course of a stream, arising within the wood. This site is 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. Despite this, the vegetation is otherwise typical of the habitat type, with an abundance of ferns such as hart's-tongue *Phyllitis scolopendrium* and shield-fern *Polystichum* spp.				
Rook Clift SAC	10.62	**Qualifying habitats:** – H9180. *Tilio-Acerion* forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes	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.
Singleton And Cocking Tunnels Singleton and Cocking Tunnels are two disused brick railway tunnels located in rural Sussex, just over 2 miles south of Midhurst. They once formed part of the Chichester to Midhurst railway line. The majority of the tunnels lie within the South Downs National Character Area (NCA 125) but the northern entrance of Cocking tunnel is within the Wealden Greensand National Character Area (NCA 120). The disused tunnels are one of the most important sites for hibernating bats in south-east England. In total eight species have occurred in the tunnels: In addition to barbastelle *Barbastella barbastellus* and Bechstein's bat *Myotis bechsteinii* the most regular species are Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentoni*, Brown longeared bat *Plecotus auritus* and Brandt's *Myotis brandti* and Whiskered bats *Myotis mystacinus*.				
Singleton and Cocking Tunnels SAC	2.45	**Qualifying species:** • S1308 Barbastelle bat *Barbastella barbastellus* • S1323 Bechstein's bat *Myotis bechsteinii*	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	**Habitat connectivity** The protected site is limited to the tunnels themselves and does not include the surrounding area which is used for commuting in and out of the tunnels, for foraging during periods of semi hibernation and for swarming in the autumn (directly outside the tunnel). More information on bat movements in the surrounding countryside could be used to better protect the integrity of the site. Additionally, disused railway tunnels to the north and south of the site have significant numbers of bats within them and probably form part of the suite of hibernacula used by bats in

			– The populations of qualifying species, and, – The distribution of qualifying species within the site.	the area. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. **Habitat fragmentation** Land management in the surrounding countryside, eg through the destruction or inappropriate management of hedgerows and woodland, is likely to have an impact on the commuting routes the bats use in and out of the site. **Public access and disturbance** In the last ten years, there has been repeated suggestions that the tunnels should be reopened as a cycle route. This would be expected to cause disturbance to the bats. It is known that light pollution has an impact on both *myotis* species, ie Bechstein's and Horseshoe bats. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat

				movements/roosting availability in and around the SAC areas. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation. The local effect on the Bechstein's bats hibernating in the tunnel is likely to be low
Thames Valley Basin Heaths Covering approximately 8,274 hectares and spanning 11 local authority areas, Thames Basin Heaths SPA forms part of an extensive complex of lowland heathlands in southern England that support important breeding bird populations. It is located across the counties of Surrey, Hampshire and Berkshire and within the Thames Basin Heaths National Character Area (NCA) which stretches westwards from Weybridge in Surrey to the countryside around Newbury in Berkshire. The SPA consists of areas of agriculturally-unimproved heathland, scrub and woodland which were once almost continuous but are now fragmented by roads, urban development and farmland. It supports important breeding populations of a number of birds which are strongly associated with heathland habitat, especially the ground nesting birds Nightjar and Woodlark, and also the Dartford Warbler which often nests close to the ground amongst dense heather and gorse. Page 3 of 21 The geology of the area consists of sand and gravel sediments which give rise to sandy or peaty acidic soils. These support dry heath vegetation in well-draining areas and wet heath vegetation in low-lying shallow slopes and bogs.				
Thames Basin Heaths SPA	8274.72	**Qualifying species**: • A224 European nightjar; *Caprimulgus europaeus;* (Breeding)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to	**Public access and disturbance** Parts of Thames Basin Heaths (and Thursley, Hankley & Frensham Commons SPA) are subject to high levels of

		• A246 Woodlark; *Lullula arborea* (Breeding) • A302 Dartford warbler; *Sylvia undata* (Breeding)	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.	recreational use and dog walkers make up a large proportion of visitors. This is likely to be affecting the distribution and overall numbers of ground-nesting Annex 1 birds (and breeding success). An 'avoidance strategy' is in place to help manage this pressure, including the provision of Suitable Accessible Natural Green Space (SANGS). However, recreational pressure may be hampering the potential for the sites to achieve their full contribution to sustainable national populations. Further work is desirable to determine the scale of impact from recreational disturbance. There is also concern at the growing use of parts of the complex by commercial dog walkers and desire to control this. Improved habitat management to increase suitability for Annex 1 birds and better coordination of habitat provision across the complex is also needed to better offset the effects of disturbance. **Undergrazing** Parts of the complex are undermanaged. Limitations are such that traditional stock cannot be used (because they are live firing ranges), or resistance to the fencing of common land. The excessive cost of

				disposal of arisings from cutting management is a significant factor making it impractical for large scale use. Controlled burning is not considered a practical alternative in this complex. Lack of grazing over a long period has resulted in poor habitat quality and restoration will take a long time. Grazing may actually be having negative impacts in some cases and improved management is required in these instances. There is scope to improve efficiency in use of resources through improved coordination, sharing of equipment and improved partnership working. **Forestry and woodland management** Large parts of Thames Basin Heaths are occupied by commercial forestry plantations where the maintenance of suitable conditions for Annex 1 birds is dependent upon rotational felling. However, there is no coordination or overall management plan and felling is dependent upon market forces. Climate change is also causing change in thinking amongst managers with introduction of broadleaves being considered and change

				from rotational to continuous cover management. **Hydrological changes** Part of Thursley, Ash Pirbright & Chobham SAC (Elstead Common) has evidence of damaging impacts due to drainage. Drains are also present on Thursley and Ockley Commons but it is not clear whether these are having adverse impacts - more research is needed here. This is becoming more urgent in the face of changing weather patterns and prolonged droughts but it is not clear at present what intervention, if any, should be put in place. **Inappropriate scrub control** Ineffective or lack of scrub control affects some areas of dry and wet heath, especially at Colony Bog, Bourley and Long Valley. The absence of scrub management plans at most sites is of concern as it is often viewed as a negative aspect with little consideration given for its value to Annex 1 birds. There is also concern that scrub management is a constant, significant drain on resources - there is a need for investigation of options

				which give an economic return on scrub management. **Invasive species** Rhododendron and Gaultheria control is on-going in parts but difficult to control where access for management is constrained. It is unclear what the scale of threat is posed by piri-pri bur to open heathland but monitoring of its spread is desirable. Possibly more of a threat to dry heath than wet. **Wildfire/arson** Uncontrolled fires are very damaging as they can have profound impacts on reptile populations, inverts and plant diversity and can result in significant habitat loss for annex 1 birds. They can affect forestry areas as well as open heath. Damaging impacts can last for many years for example by the wholesale removal of all gorse from a site. Strategies are in place in parts of the complex to reduce risk but more attention is needed to properly address this issue. Increasing threat of extensive fires is of great concern to the fire services and there is a desire for greater link up between efforts to protect

				property and roads from fire, and habitat management. **Air Pollution: impact of atmospheric nitrogen deposition** 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; spread of *Molinia* into wet and dry heath also appears to be promoted by high nitrate levels. This is most likely to be a current issue at Chobham Common but may represent a chronic adverse impact over the complex as a whole. **Feature location/ extent/ condition unknown** There are significant gaps in the knowledge of key aspects such as where woodlarks are overwintering and whether these sites are in need of protection, and coverage of the complex in terms of monitoring of Annex 1 birds is not comprehensive so recorded bird numbers are not representative of total numbers. Also, current monitoring does not provide

				information on breeding success, only territory numbers
The Mens The Mens is one of the largest ancient woodlands in West Sussex and supports a significant population of barbastelle Barbastella barbastellus. It is eight miles south-west of Horsham and falls within the Low Weald National Character Area (NCA 121). Most of the woodland lies on Weald Clay although in some places Paludina limestone outcrops at the surface. It is a varied site with a range of woodland communities and age structures which have developed due to differences in underlying soils and past management. The site also supports outstanding invertebrate, fungi, lichen and bryophyte assemblages. The woodland is predominantly high forest of sessile oak *Quercus petraea* and pedunculate oak *Quercus robur*, beech *Fagus sylvatica*, holly *Ilex aquifolium* and locally, ash *Fraxinus excelsior*, birches *Betula* spp. and wild service tree *Sorbus torminalis*. Beech dominates the lighter soils over an understorey of holly and yew *Taxus baccata*. On the heavier clay soils oak-ash woodland occurs over a mixed shrub layer which includes hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, crab apple *Malus sylvestris* and blackthorn *Prunus spinosa*. It is developing a near-natural high forest structure, in response to only limited silvicultural intervention over the 20th century, combined with the effects of natural events such as the 1987 great storm. Barbastelles roost within the woodland but tend to forage outside of the site, commuting along woodland corridors into the wider countryside.				
The Mens SAC	203.28	**Qualifying habitats** • H9120. Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*); Beech forests on acid soils **Qualifying species** • S1308 Barbastelle bat; *Barbastella barbastellus*	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	**Forestry and woodland management** A small area of the site was clear felled without consent in the last ten years and needs restoring to woodland. Woodland management for SSSI features (lichens, invertebrates) which require higher light levels may have a significant impact on the bat species. Additionally some management of the beech woodland is necessary in places. More information about potential impacts on bat species is required.

			– 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.	**Habitat connectivity** The protected site is limited to a woodland core area where breeding colonies are known to exist. The bats, however, rely on commuting and foraging habitat outside of the site and this needs to be better understood, protected and appropriately managed. It would also be useful to understand how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed appropriately to maintain favourable populations. Ebernoe Common and The Mens are similar SACs which lie within 5km of each other. It is likely that the bat populations of both sites are genetically linked. Barbastelle bats are known to commute more than 5km and there is continuous woodland cover between the sites to allow Bechstein's to travel. There is a case to investigate whether the two sites should be treated within one overarching N2K site. It would also be useful to understand (through genetic analysis) how this site relates to other bat SACs in the southern part of the UK to ensure that they and the connecting habitats are managed

				appropriately to maintain favourable populations. **Invasive species** Rhododendron is invading the south eastern edges of the site and surrounds the edges of the site on the northern side. **Change in land management** Land management in the surrounding countryside will have an impact on foraging areas for Barbastelle bats but at present the forage requirements, i.e. how much habitat and of what type, are poorly understood. Ultimately, inadequate foraging will impact on breeding success within the site. Further investigation of foraging and bat commuting route requirements of notified bat species is required, informing better management of mature hedgerows which need to be restored and maintained in the area around the site. **Air Pollution: risk of atmospheric nitrogen deposition** Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features

				are currently considered to be in favourable condition on the site. This requires further investigation. **Public access and disturbance** It is known that light pollution has an impact on bat species. The investigation would seek to identify what light levels are presently and deduce whether they are having an impact on bat movements/roosting availability in and around the SAC areas.
Thursley The Thursley, Hankley and Frensham Commons SPA forms a large complex of lowland heaths situated in Surrey close to the Hampshire border extensive areas of wet and dry heath, acid mire and bog pools. The complex is set in a largely rural setting with an unspoilt character despite its close proximity to large population centres such as London and Guildford. The surrounding landscape includes oak woodlands, conifer woods and small pastures intersected by narrow, sunken lanes. The complex is situated in the Surrey Hills Area of Outstanding Natural Beauty (AONB) and is part of the Weald National Character Area. The site supports assemblages of rare wetland invertebrate species, including notable numbers of breeding dragonflies. A significant number of non-wetland British Red Data Book invertebrates also occur on Thursley and Ockley Bogs. All six native reptile species and nationally important breeding populations of European nightjar and woodlark are also present on site.				
Thursley and Ockley Bogs Ramsar	265.24	**Ramsar criterion 2** Supports a community of rare wetland invertebrate species including notable numbers of breeding dragonflies.	N/A	N/A

		Ramsar criterion 3 It is one of few sites in Britain to support all six native reptile species. The site also supports nationally important breeding populations of European nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea.*		
Thursley, Ash, Pirbright and Chobam SAC	5138	**Qualifying Habitats**: • H4010 Northern Atlantic wet heaths with *Erica tetralix* • H4030 European dry heaths • H7150 Depressions on peat substrates of the *Rhynchosporion*	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	**Public access and disturbance** Parts of Thames Basin Heaths (and Thursley, Hankley & Frensham Commons SPA) are subject to high levels of recreational use and dog walkers make up a large proportion of visitors. This is likely to be affecting the distribution and overall numbers of ground-nesting Annex 1 birds (and breeding success). An 'avoidance strategy' is in place to help manage this pressure, including the provision of Suitable Accessible Natural Green Space (SANGS). However, recreational pressure may be hampering the potential for the sites to achieve their full contribution to sustainable national populations. Further work is desirable to determine the scale of impact from recreational disturbance. There is also concern at the growing use of parts of the complex by commercial dog walkers and desire to control this.

				Improved habitat management to increase suitability for Annex 1 birds and better coordination of habitat provision across the complex is also needed to better offset the effects of disturbance. **Undergrazing** Parts of the complex are undermanaged. Limitations are such that traditional stock cannot be used (because they are live firing ranges), or resistance to the fencing of common land. The excessive cost of disposal of arisings from cutting management is a significant factor making it impractical for large scale use. Controlled burning is not considered a practical alternative in this complex. Lack of grazing over a long period has resulted in poor habitat quality and restoration will take a long time. Grazing may actually be having negative impacts in some cases and improved management is required in these instances. There is scope to improve efficiency in use of resources through improved coordination, sharing of equipment and improved partnership working. **Forestry and woodland management** Large parts of Thames Basin Heaths are

				occupied by commercial forestry plantations where the maintenance of suitable conditions for Annex 1 birds is dependent upon rotational felling. However, there is no coordination or overall management plan and felling is dependent upon market forces. Climate change is also causing change in thinking amongst managers with introduction of broadleaves being considered and change from rotational to continuous cover management. **Hydrological changes** Part of Thursley, Ash Pirbright & Chobham SAC (Elstead Common) has evidence of damaging impacts due to drainage. Drains are also present on Thursley and Ockley Commons but it is not clear whether these are having adverse impacts - more research is needed here. This is becoming more urgent in the face of changing weather patterns and prolonged droughts but it is not clear at present what intervention, if any, should be put in place. **Inappropriate scrub control** Ineffective or lack of scrub control affects some areas of dry and wet heath, especially at Colony Bog, Bourley and

				Long Valley. The absence of scrub management plans at most sites is of concern as it is often viewed as a negative aspect with little consideration given for its value to Annex 1 birds. There is also concern that scrub management is a constant, significant drain on resources - there is a need for investigation of options which give an economic return on scrub management. **Invasive species** Rhododendron and Gaultheria control is on-going in parts but difficult to control where access for management is constrained. It is unclear what the scale of threat is posed by piri-pri bur to open heathland but monitoring of its spread is desirable. Possibly more of a threat to dry heath than wet. **Wildfire/arson** Uncontrolled fires are very damaging as they can have profound impacts on reptile populations, inverts and plant diversity and can result in significant habitat loss for annex 1 birds. They can affect forestry areas as well as open heath. Damaging impacts can last for many years for example by the wholesale removal of all

				gorse from a site. Strategies are in place in parts of the complex to reduce risk but more attention is needed to properly address this issue. Increasing threat of extensive fires is of great concern to the fire services and there is a desire for greater link up between efforts to protect property and roads from fire, and habitat management. **Air Pollution: impact of atmospheric nitrogen deposition** 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; spread of *Molinia* into wet and dry heath also appears to be promoted by high nitrate levels. This is most likely to be a current issue at Chobham Common but may represent a chronic adverse impact over the complex as a whole. **Feature location/ extent/ condition unknown** There are significant gaps in the knowledge of key aspects such as where

				woodlarks are overwintering and whether these sites are in need of protection, and coverage of the complex in terms of monitoring of Annex 1 birds is not comprehensive so recorded bird numbers are not representative of total numbers. Also, current monitoring does not provide information on breeding success, only territory numbers
Thursley, Hankley and Frensham Commons SPA	1879.83	**Qualifying Species** • A224 European nightjar; *Caprimulgus europaeus* (Breeding) • A246 Woodlark; *Lullula arborea* (Breeding) • A302 Dartford warbler; *Sylvia undata* (Breeding)	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,	Similar to SAC (above)

			– The distribution of the qualifying features within the site.	
Wealden Heaths Phase 2 The Wealden Heaths Phase II SPA is situated on an arc of hilly country on the edge of the Weald. The area runs parallel to the South Downs and is located on the borders of Hampshire, Surrey and West Sussex. 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 poorly drained 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. The Wealden Heaths SPA is situated in the Wealden Greensand National Character Area (NCA). Large parts of the SPA are used for military training, including live-firing, and so public access is restricted. However, there are also areas in the SPA which are very popular destinations for a variety of recreational uses including walking, birdwatching, orienteering and cycling. The site also encompasses Woolmer Forest SAC.				
Wealden Heaths Phase 2 SPA	2053.83	**Qualifying Species** • A224 European nightjar; *Caprimulgus europaeus* (Breeding) • A246 Woodlark; *Lullula arborea* (Breeding) • A302 Dartford warbler; *Sylvia undata* (Breeding)	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	**Change 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 the neighbouring

			– The population of each of the qualifying features, and, – The distribution of the qualifying features within the site.	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. **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 and 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. **Air Pollution: impact of atmospheric nitrogen deposition** 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. **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.
Woolmer Forest 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. Woolmer Forest SAC is included within the South Downs National Character Area (NCA Profile 125) South Downs National Park, and is a significant component within a wider complex of fragmented heaths, broadly centred on the converging boundaries of Hampshire, West Sussex and Surrey. Woolmer Forest SAC is of exceptional nature conservation importance. It represents one of the largest surviving tracts of lowland heathland in south-east England and it provides supporting habitat for a large number of locally and nationally important species. The site is unique in the UK in supporting natural populations of all 12 British amphibians and reptiles. All of the SAC is also classified as part of the Wealden Heaths Special Protection Area (SPA). The entire site is owned by the Ministry of Defence and used for military training, primarily as live-firing ranges. Necessary safety considerations have implications for the management of the site.				
Woolmer Forest SAC	666.68	**Qualifying habitats**	Ensure that the integrity of the site is maintained or restored as appropriate, and	**Change in land management** Parts of the complex have suffered from

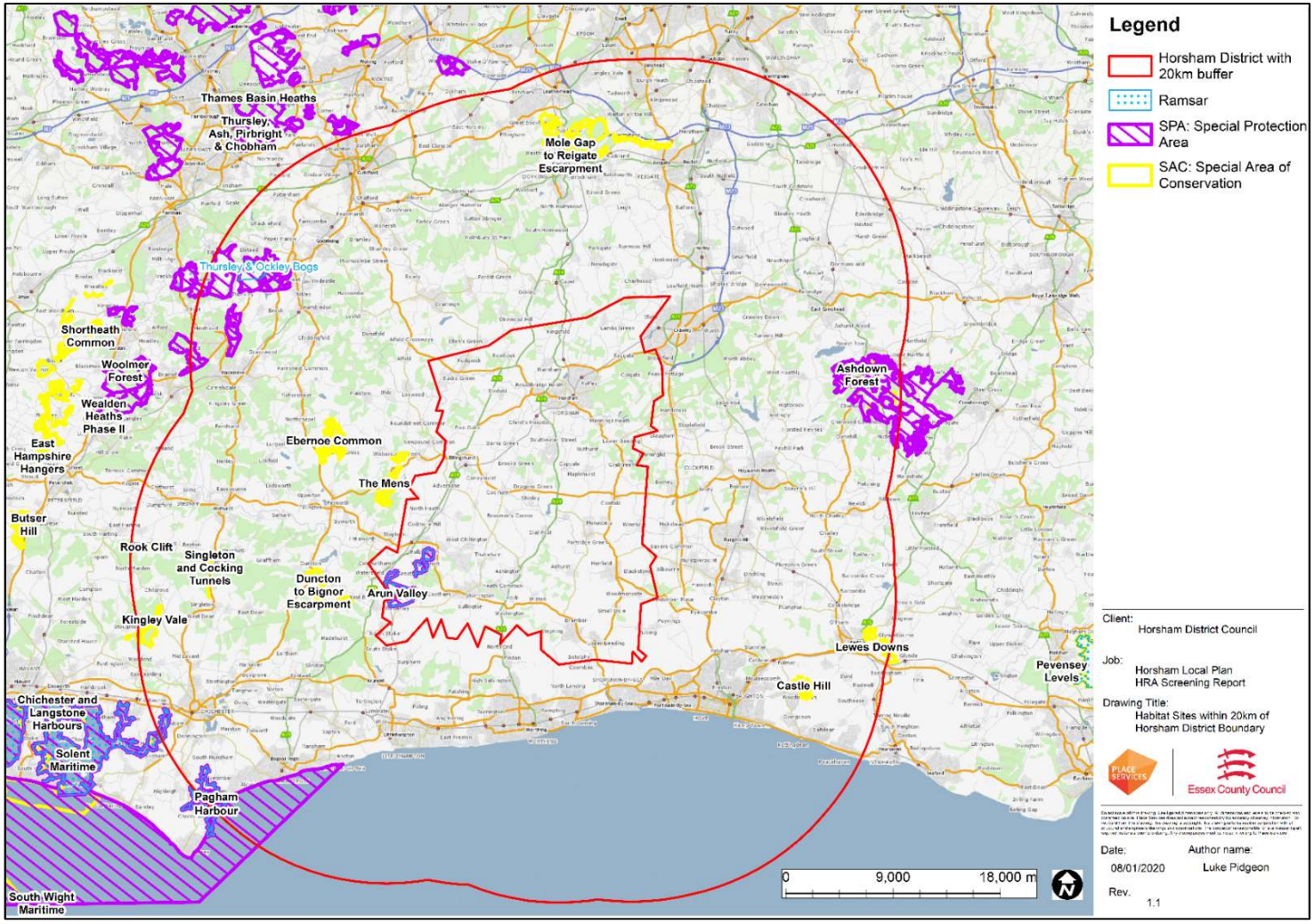
		• H3160. Natural dystrophic lakes and ponds; Acid peat-stained lakes and ponds • H4010. Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath • H4030. European dry heaths • H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface • H7150. Depressions on peat substrates of the Rhynchosporion	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	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 the neighbouring 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. **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 and 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. **Air Pollution: impact of atmospheric nitrogen deposition** 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

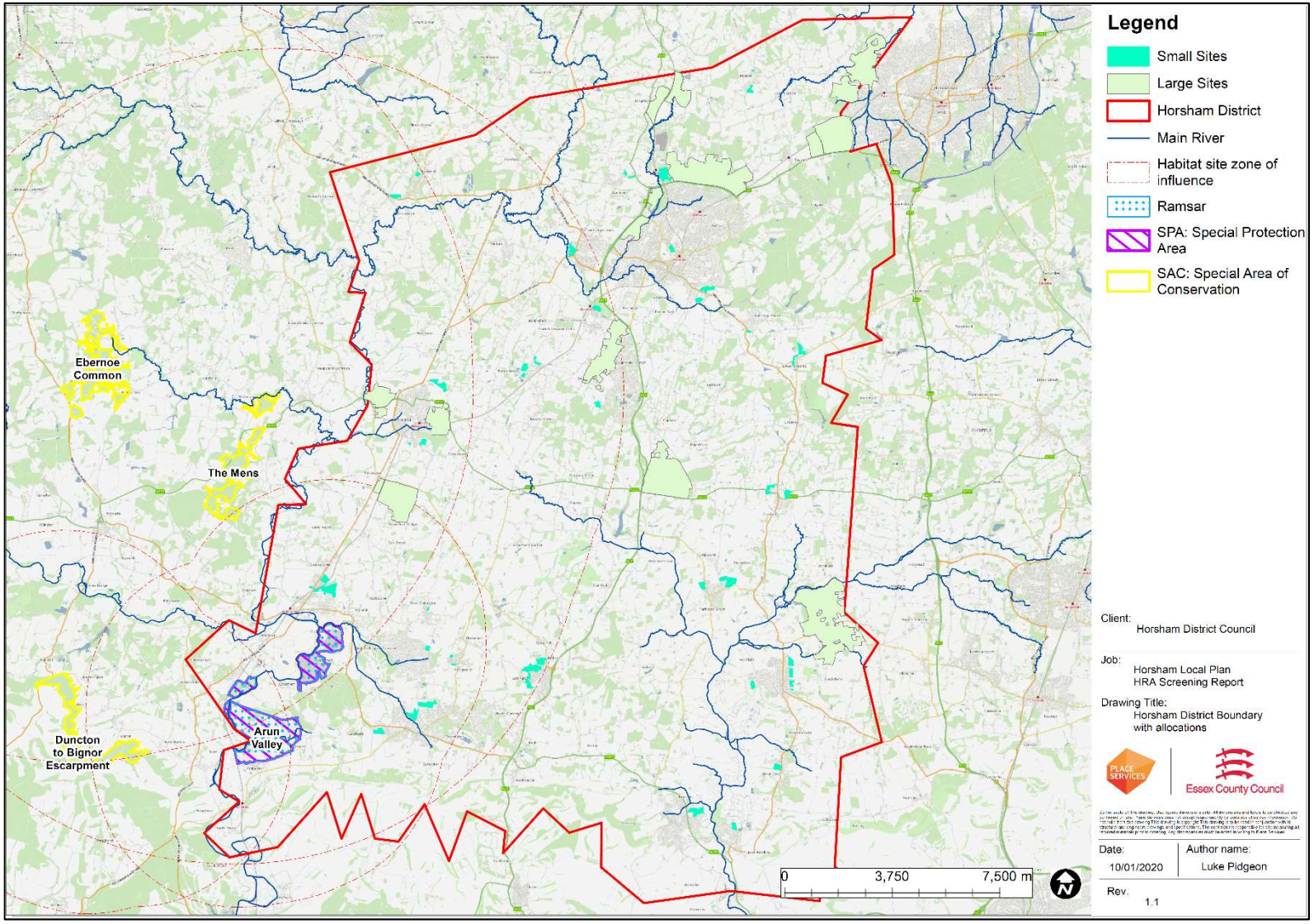
				status. This most likely to be an issue at Woolmer Forest but could be a chronic problem at all sites in the complex. **Wildfire/arson** Wildfire is a natural hazard identified in the National Risk Assessment / Register and Community Risk Registers. Wildfires in the south of England are likely to increase 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. **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.

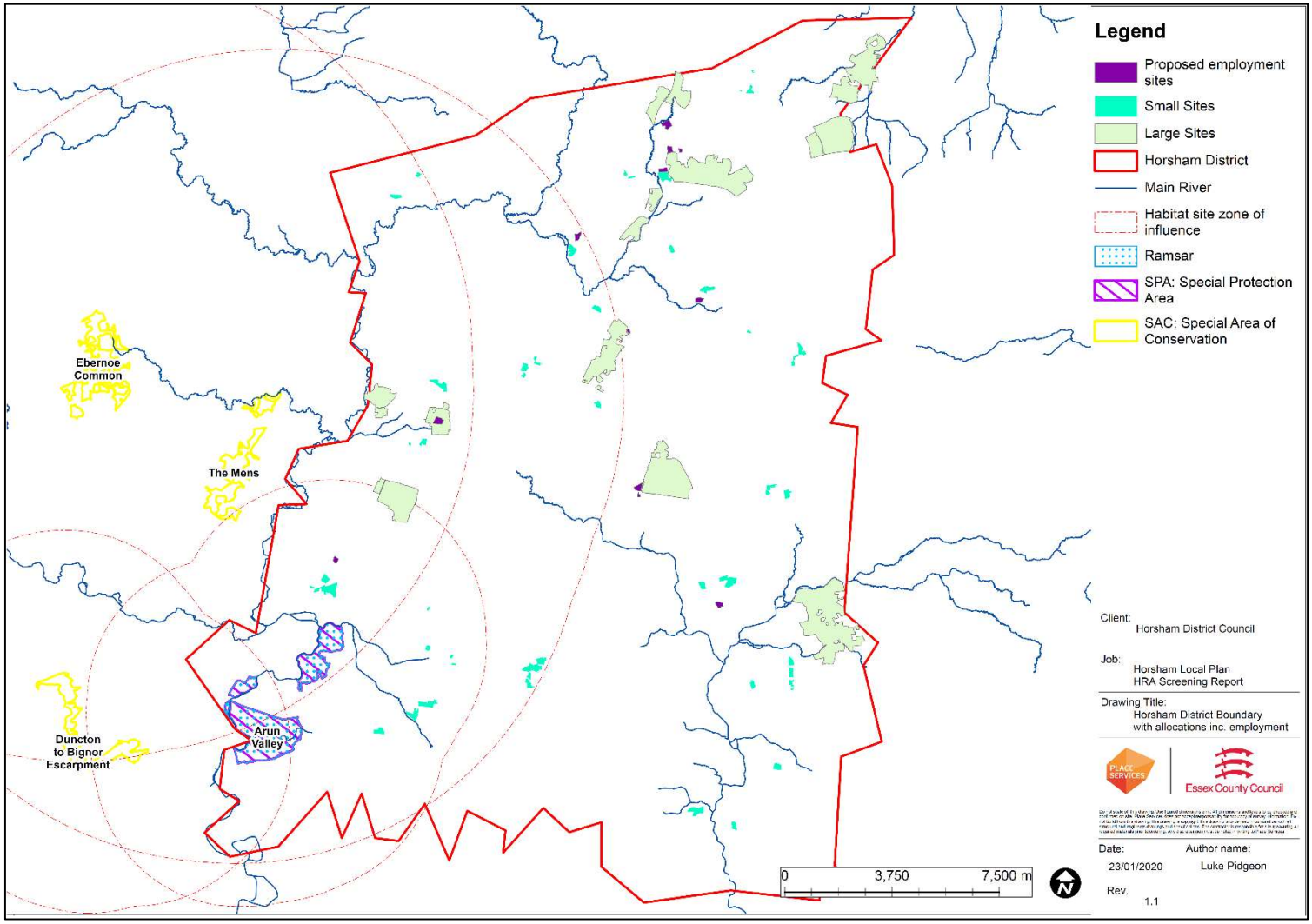
Appendix 4. Habitats Sites within 20km of the Horsham Districts Boundary



Appendix 5. Allocation sites within the ZOI of the indicated Habitats sites



Appendix 6. Employment sites within the ZOI of the indicated Habitats Sites



Place Services

Essex County Council

County Hall, Chelmsford, Essex CM1 1QH

T: +44 (0)333 013 6840

E: enquiries@placeservices.co.uk

www.placeservices.co.uk

January 2020

PLACE SERVICES

Essex County Council